PRINTED MATTTER ISSUE MANAGING SYSTEM

Patent Number: JP2001134672

Publication date: 2001-05-18

Inventor(s): NIIE MANABU; SHIOTANI MAKOTO; SANO KOICHI; FURUKAWA TATSUO

Applicant(s): HITACHI LTD

Requested Patent: JP2001134672

Application Number: JP19990311930 19991102

Priority Number(s):

IPC Classification: G06F17/60; B41J29/00; B41J29/38; G06K17/00; G06K19/00; G09C5/00; H04L9/32; H04N1/387

EC Classification:

Equivalents:

Abstract

PROBLEM TO BE SOLVED: To eliminate necessity to connect a printed matter verifying device online with a server for judging the truth/false or validity/invalidity of printed matter in ordar to place the verification information of the printed matter on the side of the server in a printed matter issue managing system for discriminating the truth/false of the issued printed matter while using the printed matter verifying device.

SOLUTION: This system uses the electronic sheet of a print recording medium, in which a data carrier mechanism capable of printing on a surface and electronic read/write with no contact is integrated, the printed matter verifying device previously storing the same verify key as the certify key of an IC chip held by a printed matter issue server and a decode key capable of decoding data enciphered while using an encipher key held by the printed matter issue server or the like. The printed matter verifying device can read the contents of the IC chip out of the electronic sheet written in the IC chip while using the proper certify key. But it can not read the contents of the IC chip out of the electronic sheet written in the IC chip while using an erroneous illegal certify key.

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2001-134672
(43)Date of publication of application : 18.05.2001

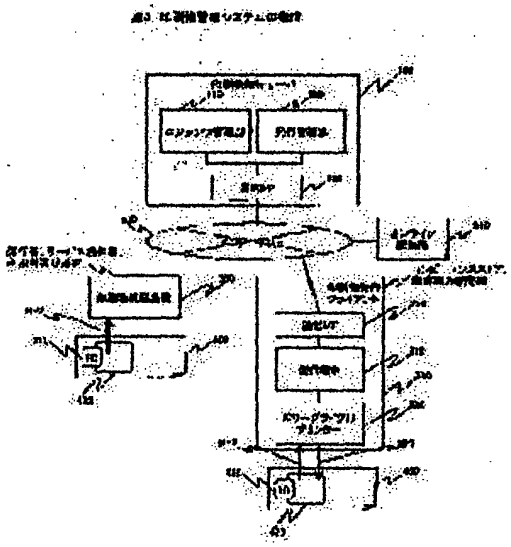
(51)Int.Cl. G06F 17/60
B41J 29/00
B41J 29/38
G06K 17/00
G06K 19/00
G09C 5/00
H04L 9/32
H04N 1/387

(21)Application number : 11-311930
(22)Date of filing : 02.11.1999

(71)Applicant : HITACHI LTD
(72)Inventor : NIIE MANABU
SHIOTANI MAKOTO
SANO KOICHI
FURUKAWA TATSUO

(54) PRINTED MATTTER ISSUE MANAGING SYSTEM

(57)Abstract:
PROBLEM TO BE SOLVED: To eliminate necessity to connect a printed matter verifying device online with a server for judging the truth/false or validity/invalidity of printed matter in ordar to place the verification information of the printed matter on the side of the server in a printed matter issue managing system for discriminating the truth/false of the issued printed matter while using the printed matter verifying device.
SOLUTION: This system uses the electronic sheet of a print recording medium, in which a data carrier mechanism capable of printing on a surface and electronic read/write with no contact is integrated, the printed matter verifying device previously storing the same verify key as the certify key of an IC chip held by a printed matter issue server and a decode key capable of decoding data enciphered while using an encipher key held by the printed matter issue server or the like. The printed matter verifying device can read the contents of the IC chip out of the electronic sheet written in the IC chip while using the proper certify key. But it can not read the contents of the IC chip out of the electronic sheet written in the IC chip while using an erroneous illegal certify key.



LEGAL STATUS

[Date of request for examination] 24.04.2003

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or

application converted registration]
[Date of final disposal for application]
[Patent number]
[Date of registration]
[Number of appeal against examiner's decision of rejection]
[Date of requesting appeal against examiner's decision of rejection]
[Date of extinction of right]

* NOTICES *

1. This document has been translated by computer.So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3.In the drawings, any words are not translated.

CLAIMS

[Claim(s)]
[Claim 1] It is the electronic sheet which is characterized by providing the following and which was built into the sheet-like medium. the aforementioned printed matter issue client Writing of the contents to the data area of IC chip of an electronic sheet nest and printing to the printing side of an electronic sheet are performed. the aforementioned printed matter verification equipment It is the printed matter managerial system characterized by being always in the state of a printed matter issue server, a printed matter issue client, and off-line, and an informational exchange performing the truth-or-falsehood judging of printed matter using the information which there is not and was stored in printed matter verification equipment. The printed matter issue server which performs generation and management of contents. The printed matter issue client which prints these contents downloaded from this printed matter issue server to a printing record medium. It is the field which can be printed about the data carrier mechanism which consists of the antenna which connected the aforementioned printing record medium with IC chip which can be written, and this IC chip electronically in the printed matter managerial system which consists of the printed matter verification equipment which performs the truth-or-falsehood judging of the published printed matter.
[Claim 2] The printed matter managerial system according to claim 1 characterized by the mark which can be checked by looking being contained in the contents of the aforementioned printed matter which carries out issue.
[Claim 3] The printed matter managerial system according to claim 2 characterized by being the mark whose aforementioned mark embedded authentication information by digital watermarking.
[Claim 4] It is the printed matter issue system characterized by being the electronic sheet which is characterized by providing the following, and which was built into the sheet-like medium, and the aforementioned printed matter issue client performing writing of the contents to the data area of IC chip of an electronic sheet nest, and printing to the printing side of an electronic sheet. The printed matter issue server which performs generation and management of contents. It is the field which can be printed about the data carrier mechanism which consists of the antenna which connected the aforementioned printing record medium with IC chip which can be written, and this IC chip electronically in the printed matter issue system which consists of the printed matter issue client which prints these contents downloaded from this printed matter issue server to a printing record medium.
[Claim 5] The printed matter managerial system according to claim 1 characterized by having an authentication key for both the aforementioned printed matter issue server and the aforementioned printed matter verification equipment accessing to the same data area of IC chip of the electronic sheet inclusion it is [inclusion] a printing record medium.
[Claim 6] The printed matter managerial system according to claim 1 with which both the aforementioned printed matter issue server and the aforementioned printed matter verification equipment are characterized by having the data encryption key stored in the same data area of IC chip of the electronic sheet nest it is [nest] a printing record medium.
[Claim 7] The data carrier mechanism which consists of the antenna electronically connected with IC

chip which can be written, and this IC chip To the printing record medium which is the electronic sheet built into the medium of the shape of a sheet which has the field which can be printed, the writing of the contents to IC chip, IC card reader section for reading the data in IC chip from the printed matter which printed the contents to a field, Printed matter verification equipment characterized by consisting of the display for displaying a means to hold the authentication key for the aforementioned IC card reader section accessing the data area of IC chip of the data carrier mechanism of the aforementioned printed matter, and the data read from IC chip.

[Claim 8] The printed matter issue server which consists of the contents Management Department which manages the contents ID which are contents and its identification information with the generation of contents characterized by providing the following, the issue Management Department which manages the data about the contents published with issue of contents, and the communications department for communicating through a network. The aforementioned contents Management Department is generation of the contents template which is a template of contents to contents at least. The contents generation section which generates the contents ID which are the identification information of the generated contents. It is the contents issue section in which it has contents and the contents DB which store Contents ID and a contents template, and the aforementioned issue Management Department publishes the contents generated at least at the aforementioned contents Management Department. A means to hold the authentication key for accessing to the data area of IC chip of the issue management DB which stores the issue management data generated in the contents issue section, and the electronic sheet inclusion which is a printing record medium, and a means to hold the printed matter issue server ID which is the identification information of a printed matter issue server.

[Claim 9] The issue terminal which directs issue of contents. The field which can print the data carrier mechanism which consists of the antenna electronically connected with IC chip which can be written, and this IC chip. A means to hold the printed matter issue client ID whose aforementioned issue terminal it is the printed matter issue client equipped with the above, and is the identification information of a printed matter issue client at least, It has the display which displays contents, and the control unit which inputs selection operation of the contents to print. IC card reader writer for the aforementioned printer with IC card reader writer performing at least the writing and read-out of the electronic sheet inclusion which is a printing record medium to the data area of IC chip, It is characterized by having the print engine which performs printing to the printing side of this electronic sheet.

[Claim 10] The printed matter issue server given in a claim 8 <TXF FR=0001 HE=250 WI=080 LX=0200 LY=0300> characterized by having an encryption key for enciphering the data stored in the data area of IC chip of the electronic sheet nest which is a printing record medium.

[Claim 11] The printed matter issue client according to claim 9 characterized by having an encryption key for enciphering the data stored in the data area of IC chip of the electronic sheet nest which is a printing record medium.

[Claim 12] The printed matter verification art characterized by providing the following. The 1st step which reads data from IC chip of the electronic sheet nest which is a printing record medium, and double-sign-izes these data. The 2nd step which displays the read data when it succeeds in read-out of data at the 1st step, and the 3rd step which displays the purport which is an invalid or a false when read-out of data goes wrong at the 1st step.

[Claim 13] The printed matter issue art in the printed matter issue server characterized by performing the 4th step which sends the data and the answer which consists of the authentication key and encryption key in a printed matter issue server characterized by providing the following to a printed matter issue client. From a printed matter issue client, at least The contents to publish When the printed matter issue demand which contains the printed matter issue client ID which is the identification information of the electronic sheet ID which is the identification information of the electronic sheet stored in IC chip of a nest, and a printed matter issue client in the electronic sheet which are the contents ID to discriminate and a printing record medium is received The 1st step which checks the existence of double issue at least by one side of the existence of printing of an electronic sheet which already has the same electronic

sheet ID, and the existence of issue of the same contents. The 2nd step which generates the time of the date of issue which is the contents issue ID which discriminates the contents to publish, and the published time. The 3rd step which records the issue management data which consists of the time of the aforementioned issue demand, the aforementioned contents issue ID, and the date of issue at least on the issue management DB. It is the aforementioned contents issue ID at least.
[Claim 14] The aforementioned printed matter issue art is a printed matter issue art according to claim 13 in the printed matter issue server characterized by having the 5th step which records further the issue result sent from the printed matter issue client on the issue management data stored in the issue management DB.
[Claim 15] The printed matter issue art in a printed matter issue client characterized by providing the following. The 1st step which reads the electronic sheet ID which is the identification information of the electronic sheet stored in IC chip of a nest into the electronic sheet which is a printing record medium. The printed matter issue demand containing the printed matter issue client ID which is the identification information of the contents ID which discriminate the contents published at least, the aforementioned electronic sheet ID, and a printed matter issue client From the 2nd step sent to a printed matter issue server, and a printed matter issue server The 3rd step which sets an authentication key as an electronic sheet at IC chip of a nest when the answer containing the contents issue ID which discriminates the contents published at least, an authentication key, and an encryption key is received, The 4th step which writes write-in data including the contents issue ID for discriminating the contents published at least in IC chip of an electronic sheet nest, and the 5th step which prints the information on contents to the field of an electronic sheet.
[Claim 16] It is the printed-matter issue art according to claim 15 carried out [that the aforementioned printed-matter issue art has the 7th step which sends an issue result including the information of failure to a printed-matter issue server when processing of the 6th step which sends an issue result including the information of a success to a printed-matter issue server further when it succeeds in the above 4th and processing of the 5th step, and the above 4th and the 5th step goes wrong, and] as the feature.
[Claim 17] The electronic sheet which is an electronic sheet which included the data carrier mechanism which consists of the antenna electronically connected with IC chip which can be written, and this IC chip in the medium of the shape of a sheet which can be printed, and is characterized by including a data carrier mechanism in at least two places, a part for a header unit and the footer portion of the direction of a form feed.
[Claim 18] The electronic sheet which is an electronic sheet which included the data carrier mechanism which consists of the antenna electronically connected with IC chip which can be written, and this IC chip in the medium of the shape of a sheet which can be printed, and is characterized by including a data carrier mechanism in at least two places, a part for a header unit and the footer portion of the direction of a form feed, i.e., a total of four places, respectively about lengthwise and a longitudinal direction.
[Claim 19] The data carrier mechanism which consists of the antenna electronically connected with IC chip which can be written, and this IC chip In the printing art which uses as a printing record medium the electronic sheet built into the sheet-like a part for a header unit and the footer portion of a medium which can be printed The 1st step which reads the electronic sheet ID in IC chip built into a part for the header unit of an electronic sheet, The 2nd step which reads the electronic sheet ID in IC chip built into the footer portion of an electronic sheet, The 3rd step which judges whether the two aforementioned electronic sheets ID are the same electronic sheets ID, The printing art characterized by detecting the printing error produced by performing a form feed while the printing record medium of two or more sheets had shifted and lapped by performing the 4th step judged to be a printing success and the 5th step judged to be printing failure if not in agreement, when in agreement.
[Claim 20] The disposable-household-electric-appliances seal issue managerial system which is a printed matter managerial system according to claim 1, makes contents the information on a disposable-household-electric-appliances seal, and is characterized by the purchaser and vender of a disposable-household-electric-appliances seal, the shipping agent of disposable household electric appliances, a processor, etc. holding the printed matter verification equipment for installing the printed matter issue

client for publishing a disposable-household-electric-appliances seal in stores, convenience stores, etc. other than the place which a publisher manages, and judging truth or falsehood and the effective invalid of a disposable-household-electric-appliances seal.
[Claim 21] The traveler's-check issue managerial system which is a printed matter managerial system according to claim 1, makes the information on a traveler's check contents, and is characterized by the purchaser and vender of a traveler's check, and the store in which a traveler's check is accepted holding the printed matter verification equipment for installing the printed matter issue client for publishing a traveler's check in places other than the place which a publisher manages, and judging truth or falsehood and the effective invalid of a traveler's check.
[Claim 22] The resident card issue managerial system which is a printed matter managerial system according to claim 1, makes the information on a resident card contents, and is characterized by the public engine which accepts the acquisition person of a resident card and a resident card as a certificate holding the printed matter verification equipment for installing the printed matter issue client for publishing a resident card in addition to the place which a publisher manages, and judging truth or falsehood and the effective invalid of a resident card.
[Claim 23] The flotation managerial system which is a printed matter managerial system according to claim 1, makes the information on a security contents, and is characterized by the purchaser of a security holding the printed matter verification equipment for installing the printed matter issue client for publishing a security in addition to the place which a publisher manages, and judging truth or falsehood and the effective invalid of a security.
[Claim 24] The railroad ticket issue managerial system which is a printed matter managerial system according to claim 1, makes the information on a railroad ticket contents, and is characterized by the purchaser, station employee, and conductor of a railroad ticket holding the printed matter verification equipment for installing the printed matter issue client for publishing a railroad ticket in addition to the place which a publisher manages, and judging truth or falsehood and the effective invalid of a railroad ticket.
[Claim 25] The admission ticket issue managerial system which is a printed matter managerial system according to claim 1, makes the information on an admission ticket contents, and is characterized by the purchaser of an admission ticket and the official in charge in the hall holding the printed matter verification equipment for installing the printed matter issue client for publishing an admission ticket in addition to the place which a publisher manages, and judging truth or falsehood and the effective invalid of an admission ticket.

[Translation done.]

* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[The technical field to which invention belongs] It is related with the printed matter issue system which publishes printed matter with required preventing injustice, such as forgery, alteration, and a duplicate, such as a security, an official document, a private document, etc. which are the piece of paper which carried out the publication about the rights and duties on the gold note which has money-value, or the law of property, and the printed matter managerial system constituted from verification equipment of printed matter.
[0002]
[Description of the Prior Art] (1) By development of the Internet, like the issue system of gold notes, such as for example, a concert ticket, and a railroad ticket, an airline ticket, if it is the former, the system constituted from a dedicated line, an exclusive terminal, and an exclusive printer may replace from now on to the Internet which everyone can use, a commercial computer, and the system constituted from a commercial printer.
[0003] Furthermore, it is also going to replace the unrelated system with the system using the network to the system using the Internet conventionally. For example, in the U.S., it is going to be put in practical use by conducting an experiment of an electronic stamp (for example, Neopost, E-Stamp, and StampMaster). The electronic stamp is usable as a postage stamp like the stamp (it considers as a conventional-type stamp) which acquires the money-value information that a stamp charge is expressed through the Internet etc., prints a stamp mark directly on an envelope or a postcard using a commercial personal computer and a commercial printer, and is used for general present.
[0004] It is possible to prevent by tapping and the electronic signature which became, finished and used public-key-encryption technology and shared-key-encryption technology about ******** of the data which may happen when using the network which everyone like the Internet can use, or the electronic authentication. The electronic signature and electronic authentication using the public-key-encryption technology and shared-key-encryption technology in the Internet are explained by "a digital signature and code technology" (Prentice Hall, Inc.), for example.
[0005] In the case of image data, there is the method of preventing the unjust duplicate and unjust alteration of image data by embedding "a watermark" electronically with digital-watermarking technology at image data. it "code system of a multimedia time" (Maruyama Gakugei Tosho) is alike, for example, and digital-watermarking technology is explained
[0006] And the mark which embedded authentication information with digital-watermarking technology is developed as a tool proving the Shinsei nature of the homepage on the Internet. An unjust alteration and an unjust duplicate have come to be unable to do this mark with digital-watermarking technology. And when an unjust alteration is performed by using the verification software developed as a means judge whether an unjust alteration and an unjust duplicate are performed, injustice can perceive easily by the warning means of displaying x mark on this mark as which this mark is not displayed in piles ("research and development about the Shinsei nature proof technology of the Internet homepage",

Telecommunications Advancement Organization of Japan).
[0007] (2) As for the system constituted from equipment of above Internet and marketing in general, the home, the station, the public place, etc. assume use in the scene where management by the publisher does not reach. Therefore, it is possible that a user publishes printed matter unjustly or to use the printed matter published unjustly.
[0008] By JP,11-78176,A "a printed matter issue managerial system, a printed matter issue management method, and a printer", the printed matter issue managerial system and method in which prevention of unjust issue of printed matter and prevention of use of inaccurate printed matter are possible are offered to such a technical problem. Namely, the identification information given to the printing record medium and the content printed to a printing record medium Associate beforehand (it is hereafter called contents) and the medium information management to memorize is set to a printed matter issue server. The printer which can read the identification information of a printing record medium is used. The identification information of a printing record medium is read at the time of printing, the relation between identification information and the contents to which the printing demand was given is collated in the above-mentioned medium information management, and issue of inaccurate printed matter is prevented by enabling printing of the contents demanded when the same relation existed. Moreover, when recording the state on medium information management at the time of a printing success and using a printing record medium [finishing / printing and issue], similarly the identification information of a printing record medium is read, and since truth or falsehood or an effective invalid is judged by collating identification information in the above-mentioned medium information management, use of inaccurate printed matter can be prevented.
[0009] (3) When it stands on the viewpoint of forged prevention and duplicate prevention of printed matter, the high security function of an IC card in which the antenna for communicating with IC chip which can be written by non-contact electronically was incorporated is effective. the structure and technology of an IC card -- for example -- "noncontact IC card and use technology [ ] -- it Contactless IC Cards " (technical press company) is alike, and is explained
[0010] Drawing 1 is drawing which explains the outline about the structure of the IC card reader writer (following and IC reader writer) of a non-contact method.
[0011] IC reader writer 10 consists of the antenna 13 for communicating between CPU11 which performs control and data processing of IC reader writer, the RF section 12 which performs modulation of transmit data, and coding of received data, and the antenna 22 of IC card 20. IC card 20 consists of the antenna 22 for communicating between a data storage, the IC chip 21 which performs I/O management, and the antenna 13 of IC reader writer 10.
[0012] Drawing 2 is the data format of the storage region of the IC chip 21. The data format consists of sector 21S and record 21R. The key for permitting the operation to a sector called authentication key can be set to a sector (21A). And conditions of access, such as a lead and a light, can also be set up for every record. An authentication key (AK1) is set as CPU11 of IC reader writer 10, and is set as the IC chip 21 through an antenna 13 and an antenna 22 like RF1. The same is said of access condition.
[0013] Since the R/W of IC reader writer is impossible between IC chips unless it uses the authentication key set as IC chip, it needs to set the authentication key corresponding to before R/W to IC reader writer 10 beforehand. Moreover, IC reader writer 10 is written in the IC chip 21 through an antenna 13 and an antenna 22 like RF1, after enciphering write-in data (WD1). The encryption key for encryption (SK1) is set as CPU11 of IC reader writer 10, it writes in in CPU11, and data encryption processing is performed.
[0014] On the other hand, when reading the data written in the IC chip 21 through an antenna 22 and an antenna 13 like RF2, it was enciphered in CPU11, and reads, double sign-ized processing of data is performed, and read-out data (RD1) are taken out. In addition, recognition data are written in the SA of IC chip so that R/W may be possible only in specific IC reader writer. Usually, since the recognition data expresses the maker of an IC card and IC reader writer, it cannot be written by makers' different IC card and different IC reader writer.
[0015] As mentioned above, IC chip has prevented disclosure of data by the authentication key. When

the set-up authentication key and the encryption key have structure which cannot be read and it is going to read by force, there is also an IC chip with the structure which destroys IC, and the security is high. For example, an IC card is used as an electronic ticket and it is made to record ticket information in an IC card in JP,10-63884,A "the usage of the electronic ticket using the electronic ticket system and this system." Moreover, IC sheet (it is hereafter called an electronic sheet) which built electronically IC chip which can be written into the sheet with the field which can be printed and written in by non-contact in recent years is devised (Hitachi Maxell, Ltd.).

[0016]

[Problem(s) to be Solved by the Invention] With the conventional technology "JP,11-78176,A", in order to have to collate the identification information read in printed matter (printing record medium) at the time of use in order to judge truth or falsehood and the effective invalid of printed matter in the above-mentioned medium information management, there is a problem that online connection must be made with medium information management each time. Furthermore, in order that identification information may judge the truth or falsehood of printed matter by whether it is recorded on the above-mentioned medium information management, there is a problem that the duplicate of printed matter and forgery are possible, easily using the identification information have proved that is effective.

[0017] Since there is no means to display or write ticket information on an electronic ticket top front face in the case of the conventional technology "JP,10-63884,A", there is a problem that the content cannot be distinguished with an electronic ticket simple substance. moreover, in order to judge the truth or falsehood of an electronic ticket also in this conventional technology, there is a problem that it must communicate by connecting the ticket ticket gate terminal which performs the ticket gate of a ticket with the ticket pin center,large which performs issue and management of a ticket

[0018] The purpose of this invention is offering the printed matter managerial system possessing the verification equipment with which anyone's can perform easily the truth or falsehood of printed matter, and effective invalid judgment.

[0019] Moreover, the purpose of this invention is offering the printed matter issue system which can publish the high printed matter of safety to forgery, a duplicate, and an alteration.

[0020]

[Means for Solving the Problem] If the authentication key which IC reader writer has is not in agreement in order to attain the purpose of this invention, the property in which it cannot write between IC chips is used.

[0021] In this invention, it can print on a front face, and the printed-matter verification equipment which has memorized beforehand the double sign-ized key which can double-sign-ize the data enciphered using the encryption key held at the same authentication key as an authentication key, a printed-matter issue server, etc. of the electronic sheet which is the printing record medium which incorporated electronically the data carrier mechanism which can be written, and IC chip held at a printed matter issue server by non-contact is used. Printed matter verification equipment has the function to provide IC reader and to perform above-mentioned IC chip and above-mentioned R/W of an electronic sheet nest. With the property in which it cannot write between IC chips if the authentication key which the above-mentioned IC reader writer has is not in agreement, printed matter verification equipment Read-out of the content of IC chip can be performed from the electronic sheet printed proper, i.e., the electronic sheet written in IC chip using the proper authentication key. Since read-out of the content of IC chip cannot be performed from the electronic sheet printed unjustly, i.e., the electronic sheet written in IC chip using the mistaken inaccurate authentication key, a judgment and an effective invalid judgment of truth or falsehood are possible.

[0022] As mentioned above, according to this invention, since the truth or falsehood of printed matter and an effective invalid judgment can be performed using a printed matter issue system and off-line printed matter verification equipment, anyone can perform easily the truth or falsehood of printed matter, and an effective invalid judgment.

[0023] Moreover, since the electronic sheet which incorporated electronically the data carrier mechanism which can be written is used by non-contact as a printing record medium according to this

invention, the high printed matter of safety can be published to forgery, a duplicate, and an alteration.
[0024]
[Embodiments of the Invention] The case where this invention is applied to the issue system of a disposable-household-electric-appliances seal is made into the 1st example, and the case where it applies to the issue system of a traveler's check is explained as the 2nd example, respectively.
[0025] (1) Explain the disposable-household-electric-appliances seal issue system which is the 1st example of a disposable-household-electric-appliances seal issue system this invention using drawing 1 - drawing 18.
[0026] (1.1) Explain the disposable-household-electric-appliances recovery and the processing system using the disposable-household-electric-appliances recovery and processing-system disposable-household-electric-appliances seal, and disposable-household-electric-appliances seal using the disposable-household-electric-appliances seal.
[0027] A disposable-household-electric-appliances seal shall be a seal stuck on the home electronics which become unnecessary in a home or a place of business, and perform recovery and processing, and the thing of a gold note with value equivalent to recovery / processing costs shall be said.
[0028] An example of a disposable-household-electric-appliances seal is shown in drawing 3. In this example, the seal No31 given for every seal, the items 32 of disposable household electric appliances, the amount of money 33 showing recovery / processing costs, the publisher 34 of a disposable-household-electric-appliances seal, the date of issue 35, and a publisher's authentication mark 36 shall be printed by the disposable-household-electric-appliances seal 30. There may be a notation of others, such as a bar code, besides these.
[0029] The owner who is going to dispose of a household-electric-appliances article purchases the disposable-household-electric-appliances seal which suited the household-electric-appliances article items which it is going to dispose of in selling places which sell a disposable-household-electric-appliances seal, such as a convenience store and a store. And an owner requests the household-electric-appliances article (disposable household electric appliances) which stuck to the household-electric-appliances article which is going to dispose of the purchased disposable-household-electric-appliances seal, and stuck the disposable-household-electric-appliances seal to the owner itself or a transporter, and conveys to the appointed place. The disposable household electric appliances put on the appointed place are collected and processed by the contractor who manages disposable-household-electric-appliances recovery and a processing system.
[0030] Thus, a disposable-household-electric-appliances seal is a certificate proving the owner who is going to discharge disposable household electric appliances having paid recovery / processing costs correctly, and is a gold note with value equivalent to recovery / processing costs as mentioned above. Therefore, a means to check that a disposable-household-electric-appliances seal must not be reproduced, forged and altered, and is not reproduced, forged and altered is required.
[0031] Hereafter, the 1st example explains the case where it applies to a disposable-household-electric-appliances seal issue system.
[0032] (1.2) System configuration drawing 4 of the printed matter managerial system in a disposable-household-electric-appliances seal issue system is the whole printed matter managerial system S1 composition in the disposable-household-electric-appliances seal issue system explained in the first example.
[0033] This system consists of a printed matter issue server 100, a printed matter issue system S2 which consists of the printed matter issue client 200, and printed matter verification equipment 300. And by this system, the electronic sheet 400 which incorporated electronically the non-contact data carrier mechanism 20 which can be written is used by non-contact as a printing record medium for disposable-household-electric-appliances seals.
[0034] The printed matter issue server 100 is installed in the head office of for example, a disposable-household-electric-appliances seal issue system, and the printed matter issue client 200 is installed in the selling place which sells disposable-household-electric-appliances seals, such as a convenience store and a store. Persons in connection with recovery and processing of disposable household electric appliances,

such as a vender who sells a disposable-household-electric-appliances seal, an owner of disposable household electric appliances, a transporter which transports disposable household electric appliances, and a processor which processes disposable household electric appliances, possess printed matter verification equipment 300.
[0035] The printed matter issue server 100 consists of generation of contents, the contents Management Department 110 which manages the generated contents, issue of contents and the issue Management Department 120 which performs management of these issue data, and communication I/F130 for communicating with the printed matter issue client 200 through a network.
[0036] The printed matter issue client 200 consists of the issue terminal 210 which operates printing issue of contents, and communication I/F230 for communicating contents with the printed matter issue server 100 at the electronic sheet 400 which is a printing record medium through printing and the printer 220 with IC reader writer which records electronically, and a network. The printed matter issue client 200 connects with the printed matter issue server 100 through the Internet 900.
[0037] In addition, in order to secure the security of communication between the printed matter issue server 100 and the printed matter issue client 200, as shown in drawing 4, you may use the electronic authentication by the online certificate authority 910. Moreover, it does not connect with the Internet 900, but printed matter verification equipment 300 is in an off-line state, and has a relation independent of the printed matter issue server 100.
[0038] The electronic sheet 400 is a printing record medium incorporating the data carrier mechanism which changes from the antenna 420 electronically connected to the IC chip 410 which can be written, and the IC chip 410 to the medium of the shape of a sheet which can be printed.
[0039] The detailed composition of the printed matter issue server 100 is explained using drawing 5.
[0040] The contents Management Department 110 consists of the contents DB112 which store the contents generation section 111 which generates the contents ID which are generation of contents, and the identification information of the generated contents from the contents template which is a template of contents, contents and Contents ID, and a contents template. Here, contents are information which is printed by the disposable-household-electric-appliances seal of drawing 3 and which made the item a seal No31, items 32, the amount of money 33, a publisher 34, the date of issue 35, and a publisher's authentication mark 36, and also includes the item value. Moreover, a contents template is a template for generating contents, and is the items 32, the amount of money 33, and the data that set up the item value about the publisher 34 except the seal No31 which determines an item value dynamically among the above-mentioned contents, the date of issue 35, and a publisher's authentication mark 36 here.
[0041] The disposable-household-electric-appliances seal of drawing 3 is taken for an example, and the outlines of the processing which generates contents and Contents ID from a contents template, and those relations are shown in drawing 6.
[0042] In drawing 6, the seal No data 41, the item data 42, the amount-of-money data 43, the publisher data 44, the date-of-issue data 45, and the authentication mark data 46 correspond to the seal No31 of drawing 3, items 32, the amount of money 33, a publisher 34, the date of issue 35, and a publisher's authentication mark 36 respectively. Moreover, seal No data 41P, date-of-issue data 45P, and authentication mark data 46P are data with which the item value is not set up.
[0043] Contents generation processing (CG0) of drawing 6 is processing performed in the contents generation section 111. In contents generation processing (CG0), to seal No data 41P of the contents template 51, date-of-issue data 45P, and authentication mark data 46P, a setup of an item value (CG1), Set up the contents ID 53 of contents (CG2), and the contents 52 and Contents ID 53 which consist of the seal No data 41, the item data 42, the amount-of-money data 43, the publisher data 44, the date-of-issue data 45, and the authentication mark data 46 are generated. Contents 52 and contents ID 53 are associated, and it stores in contents DB112.
[0044] The contents issue section 121 in which the issue Management Department 120 of drawing 5 publishes the contents generated at the contents Management Department 110, The issue management DB122 which stores the issue management data generated in the contents issue section, The authentication key AK2 for accessing to the specific sector (referring to drawing 2) of the IC chip 410 of

electronic sheet 400 inclusion, It consists of the printed matter issue server ID (SVID) which are the encryption key SK2 for enciphering the data written in IC chip, and the identification information of the printed matter issue server 100.
[0045] The detailed composition of the printed matter issue client 200 is explained using drawing 7.
[0046] The issue terminal 210 consists of the printed matter issue client ID (CLID) which is the identification information of the printed matter issue client 200, the display 212 which performs the display of contents, the control unit 213 which inputs selection operation of the contents to print, and the control section 211 which performs control of the issue terminal 210. A control unit 213 is used for the password input for checking the user of printing start operation of contents, or the printed matter issue client 200 other than selection operation of contents etc. Moreover, you may use biometrics equipment using the fingerprint, the voiceprint, etc. as a means to check a user.
[0047] The printer 220 with IC reader writer consists of IC reader writer 222 which write data with the IC chip 410 of electronic sheet 400 inclusion, the print engine 223 which performs printing to electronic sheet 400 front face, and the control section 221 which performs control of the printer 220 with IC reader writer.
[0048] The detailed composition of printed matter verification equipment 300 is explained using drawing 8.
[0049] Printed-matter verification equipment 300 consists of the authentication key AK3 for accessing to the specific sector of IC chip of electronic sheet inclusion, the double sign-ized key SK3 for double-sign-izing the data read from IC chip, the IC reader 302 that reads data from the IC chip 410 of electronic sheet 400 inclusion, the display 303 which displays the judgment result of the truth or falsehood of an electronic sheet etc., a control unit 304, and the control section 301 which performs control of printed-matter verification equipment 300. In addition, the authentication key AK3 and the double sign-ized key SK3 are severely managed so that it may not reveal. Moreover, the authentication key AK2 of the printed matter issue server 100 and the authentication key AK3 of printed matter verification equipment 300 are the same.
[0050] The IC chip 410 and antenna 420 of a lot are built into the electronic sheet 400 used with the disposable-household-electric-appliances seal of this example at least. In the initial state, the authentication key of all the sectors of IC chip is set as a certain specific value. Let this be the initial authentication key AK0. The initial authentication key AK0 is always held in the printed matter issue client 200.
[0051] (1.3) Explain issue processing of a printed matter issue processing disposable-household-electric-appliances seal using drawing 9 - drawing 13.
[0052] It is in charge of issue of a disposable-household-electric-appliances seal, and already by the control unit 213 of the issue terminal 210 in the printed matter issue client 200 Login to the printed matter issue system S2 and the items of the disposable-household-electric-appliances seal which the printed matter issue system S2 publishes are inputted. The contents ID which are the identification information of contents and contents in the contents Management Department 110 are sent to the printed matter issue client 200 from the printed matter issue server 100. In the printed matter issue client 200, ********** contents shall be displayed on the display 212 of the issue terminal 210. Drawing 9 is the example of a display of the contents 52 which are examples of contents.
[0053] Like drawing 9, the seal No61 and items 62 which are displayed on screen 212A of the display 212 of the issue terminal 210, the amount of money 63, a publisher 64, the date of issue 65, and a publisher's authentication mark 66 correspond to the seal No data 41 of contents 52, the item data 42, the amount-of-money data 43, the publisher data 44, the date-of-issue data 45, and the authentication mark data 46 respectively. In addition, when peculiar data are included in contents like the seal No31 of the disposable-household-electric-appliances seal of this example, the issue is a limitation once per contents.

[0054] The client side printed matter issue processing OFC0 of drawing 10 shows the processing in the printed matter issue client 200 after the contents 52 printed in the issue terminal 210 were chosen by the claimant of disposable-household-electric-appliances seal issue (printing button 212B depression of

drawing 9) and printing issue was directed.
[0055] Drawing 11 - drawing 13 show the printed matter issue processing in the printed matter issue server 100.
[0056] In the client side printed matter issue processing OFC0 of drawing 10, if contents 52 are chosen and printing issue is directed, the electronic sheet ID 411 will be read from the sector for electronic sheet ID record of IC chip built into the electronic sheet 400 set to the printer 220 with IC reader writer by IC reader writer 222 using the initial authentication key AK0 (OFC1). And issue demand OFC2A which consists of 47 with the selected contents ID 53 at the time of the electronic sheet ID 411 which is the identification information of the printed matter issue client ID (CLID) which is the identification information of the printed matter issue client 200, and the electronic sheet 400, and a printing opening day is transmitted to the printed matter issue server 100 from the printed matter issue client 200 (OFC2).

[0057] In the server side printed matter issue processing OFS0 of drawing 11, reception of issue demand OFC2A investigates whether the contents of whether it is printing on the electronic sheet 400 with the electronic sheet ID 411 same in the past and the same contents ID are published, or it does not become double issue at the issue Management Department 120 (OFS2). (OFS1) When becoming double issue (OFS2Y), answer OFS6A which consists of issue disapproval is transmitted to the printed matter issue client 200 from the printed matter issue server 100 (OFS7). On the other hand, 48 is generated at the time of the date of issue which is the time which permitted the contents issue ID 54 which shows that the contents expressed with contents ID 53 were published, and issue when not becoming double issue (OFS2N) (OFS3). 47 and the issue management data 55 which consists of 48 at the time of the date of issue are stored in the issue management DB122 at the time of this contents issue ID 54, contents ID 53, the printed matter issue client ID (CLID), the electronic sheet ID 411, and a printing opening day (OFS4).
[0058] The write-in data (WD2) which consist of 48 at the time of contents 52, contents ID 53, the contents issue ID 54, the printed matter issue server ID (SVID), the printed matter issue client ID (CLID), and the date of issue are generated using the issue management data 55, the printed matter issue server ID (SVID), contents 52, and contents ID 53 (OFS5).
[0059] In addition, it writes in drawing 12 with the issue management data 55, and the generation process of data (WD2) is shown. As shown in drawing 12, it is the processing which contents issue processing (CR0) corresponds to Steps OFS3 and OFS4, and write-in data generation processing (CW0) corresponds to Step OFS5, respectively, and is performed in the contents issue section 121. In contents issue processing (CR0), 48 is set up at the time of the date of issue with a setup (CR1) of the contents issue ID 54 of contents with the issue demand (CR2), and processing which stores the issue management data 55 in the issue management DB122 is performed. In write-in data generation processing (CW0), it writes in from the issue management data 55, the printed matter issue server ID (SVID), contents 52, and contents ID 53, and data (WD2) are generated.
[0060] Answer OFS6A which consists of the write-in data WD2, the authentication key AK2, and the encryption key SK2 is transmitted to the printed matter issue client 200 from the printed matter issue server 100 after Step OFS5 (OFS6).
[0061] In the client side printed matter issue processing OFC0 of drawing 10, answer OFS6A from the printed matter issue server 100 is received (OFC3), and the contents judge whether it is what permits issue (OFC4).
[0062] If answer OFS6A is issue disapproval (OFC4N), writing of the issue 410 of a disposable-household-electric-appliances seal, i.e., IC chip of the electronic sheet 400, and printing to electronic sheet 400 front face will not be performed.
[0063] On the other hand, if answer OFS6A is the contents to which issue is permitted (OFC4Y), in the issue terminal 210, the authentication key AK2 will be set as the sector for data logging of the IC chip 410 of the electronic sheet 400 by IC reader writer section 222 of the printer 220 with IC reader writer (OFC5).
[0064] And in IC reader writer section 222, the write-in data WD2 which wrote in using the encryption

key SK2, enciphered data WD2, and were enciphered to IC chip section 410 of the electronic sheet 400 using the authentication key AK2 are written in (OFC6). At this time, when writing goes wrong, issue result OFC10A which consists of (OFC7N), and the contents issue ID 54 and an issue result "failure" is transmitted to the printed matter issue server 100 (OFC11).
[0065] When writing is successful, printing of contents 52 is performed to electronic sheet 400 front face with the print engine 223 of the printer 220 with a (OFC7Y) IC reader writer (OFC8). At this time, when printing goes wrong, issue result OFC10A which consists of (OFC9N), and the contents issue ID 54 and an issue result "failure" is transmitted to the printed matter issue server 100 (OFC11). Drawing 3 is an example of a printing result. On the other hand, when it succeeds in printing, (OFC9Y) and issue result OFC10A which consists of the contents issue ID 54 and an issue result "a success" are transmitted to the printed matter issue server 100 (OFC10).
[0066] In the issue result registration processing RFS0 of drawing 13, reception of issue result OFC10A adds an issue result "a success" or "failure" to the issue management data 55 which has the contents issue ID 54 among the data stored in the issue management DB122 (RFS2). (RFS1)
[0067] The client side printed matter issue processing OFC0 in which it explained by this example, the server side printed matter issue processing OFS0, and the issue result registration processing RFS0 are one example to the last, and are not restricted to this art. For example, as for the write-in processing to the IC chip 410 of Step OFC5 to the step OFC7, and printing processing of Step OFC8 and Step OFC9, turn may interchange in the client side printed matter issue processing OFC0.
[0068] Check processing of the double issue in Step OFS2 of drawing 13 is explained. There are a method of investigating whether it printing on the electronic sheet which has the electronic sheet ID same in the past as mentioned above, and a method of investigating whether the contents of the same contents ID are published, when allowing only one issue per contents like the disposable-household-electric-appliances seal of this example in check processing of double issue. About the latter method, when allowing issue of multiple times per contents, it does not correspond. Moreover, it is good though issue of the contents concerned will be accepted if the past issue result is "failure" even when allowing only one issue per contents.
[0069] In addition, in this example, although the encryption key SK2 for issue is held in the printed matter issue server 100, even if it holds in the printed matter issue client 200 instead, the same function is realizable.
[0070] (1.4) Explain the processing flow of a truth-or-falsehood judging of the printed electronic sheet 400 which is the printed matter verification processing above, and was made and published, i.e., a disposable-household-electric-appliances seal, using drawing 14.
[0071] The printed electronic sheet 400 is set in printed matter verification equipment 300 in verification of printed matter.
[0072] In the printed matter verification processing OCK0, the data which read data from the sector for data logging of IC chip section 410 of electronic sheet 400 nest, and were similarly read to printed matter verification equipment 300 by IC reader section 302 of printed matter verification equipment 300 using the double sign-ized key SK3 memorized beforehand using the authentication key AK3 beforehand memorized to printed matter verification equipment 300 are double-sign-ized (OCK1).
[0073] If it succeeds in read-out (OCK2Y), the data double-sign-ized at Step OCK1 will be displayed on a display 303 (OCK3). When-izing has been correctly carried out [double sign] at this time, it displays like drawing 15.
[0074] As shown in drawing 15, display on the screen 303A upper part of the display 303 of printed matter verification equipment 300. A seal No61, items 62, the amount of money 63, a publisher 64, the date of issue 65, and a publisher's authentication mark 66 It corresponds to the seal No data 41 of contents 52, the item data 42, the amount-of-money data 43, the publisher data 44, the date-of-issue data 45, and the authentication mark data 46 respectively. At the time of the contents ID 67 and the contents issue ID 68 which are displayed on the screen 303A lower part, the printed matter issue server ID 69, the printed matter issue client ID 70, and the date of issue, 71 It corresponds to data 48 respectively at the time of the contents ID data 53, the contents issue ID data 54, the printed matter issue server ID (SVID),

the printed matter issue client ID (CLID), and the date of issue.
[0075] On the other hand, when read-out goes wrong, it judges with the printed [(OCK2N)] electronic sheet 400 being a false or an invalid (OCK4), and it is displayed as " "judged with fake"" on a display 303 (OCK5).
[0076] Thus, when it succeeds in reading of data and data are able to be displayed on the display 303 of printed matter verification equipment 300 in the normal state, it judges with the electronic sheet 400 being truth. This uses the property in which it cannot be written between IC chips if the authentication key of writer [IC reader /] does not correspond.
[0077] (1.5) Step OFC8 in the printed matter issue processing OFC0 of the contents printing method this example to printed matter -- the electronic sheet front face of the state of a blank paper -- contents 52 -- although all were printed, you may divide and print contents as items 32 and a publisher 34, for example, use the electronic sheet printed beforehand and a seal No31, the amount of money 33, the date of issue 35, and a publisher's authentication mark 36 are printed at the time of printed matter issue this invention does not specify the printing method of contents.
[0078] (1.6) The authentication mark 36 of the publisher of authentication mark drawing 3 is one of the meanses for a publisher guaranteeing that the published disposable-household-electric-appliances seal is a genuine article. Since it is easy to recognize the notation method formed by the color, the form, the pattern, etc. like a mark visually, it has the advantage that the purpose which the notation expresses is easy to be well-known to ordinary men.
[0079] By putting in a publisher's authentication mark into contents, a user can publish now the printed matter which can judge the truth or falsehood easily. Furthermore, the mark which embedded authentication information with the digital-watermarking technology expressed above "a Prior art" is used as an authentication mark. The verification software similarly described above "the conventional technology" by including in the issue terminal 210 of the printed matter issue client 200 It can judge easily that the printed matter issue server which published contents is Shinsei, and the contents sent from the printed matter issue server are Shinsei using the issue terminal 210 of the printed matter issue client 200. Moreover, the Shinsei nature of the contents recorded on the electronic sheet using printed matter verification equipment 300 by building into printed matter verification equipment 300 the verification software described above "the conventional technology" can be judged easily.
[0080] (1.7) At least one IC chip 410 is built into the disposable-household-electric-appliances seal explained in the composition and the 1st example of the printing method of an electronic sheet. Here, how to detect printing / issue error to accuracy more by changing the number and configuration method of IC chip to incorporate is explained.
[0081] The structure of the electronic sheet 450 is explained using drawing 16.
[0082] Call "printing side" the field which prints the main contents, and the field printed in a "printing side" is called "printing field 451." When calling "the header field 452" and a downward grid portion "footer field 453" for the upper grid portion of the printing field 451, IC chip is respectively built into the field which does not print a header in the header field 452, and the field which does not print a footer in the footer field 453. Here, IC chip which incorporated IC chip incorporated in the header field 452 in the header IC chip (410U) and the footer field 453 is called footer IC chip (410L). And the electronic sheet ID which is the identification information of an electronic sheet, respectively is stored in a header IC chip (410U) and a footer IC chip (410L).
[0083] Thus, the printing error produced by performing a form feed while the printing record medium of two or more sheets had shifted and lapped with the electronic sheet by building IC chip into two upper and lower sides at least is detectable. Hereafter, the method is explained.
[0084] Drawing 17 shows the printing processing flow to the electronic sheet 450 in the printer 220 with IC reader writer. This processing is equivalent to processing of Step OFC6 in the drawing 10 client side printed matter issue processing OFC0 - Step OFC9. Moreover, it treats like [key / encryption / an authentication key and] the client side printed matter issue processing OFC0.
[0085] First, the electronic sheet ID is read from the header IC chip (410U) of the electronic sheet 450 set to the printer 220 with IC reader writer by IC reader writer 222 of the printer 220 with IC reader

writer (PRT1). If it is a read-out success at this time (PRT2Y), it will write in a header IC chip and data (step OFS6 reference of drawing 11) will be written in (PRT3). And when it succeeds in writing (PRT4Y), contents are printed to the printing field 451 of the electronic sheet 450 with the print engine 223 (PRT5).
[0086] When it succeeds in printing of contents (PRT6Y), the electronic sheet ID is read from a footer IC chip (410L) by IC reader writer 222 (PRT7). If it is a read-out success (PRT8Y), the electronic sheet ID read at Step PRT1 will be compared with the electronic sheet ID read at Step PRT7 (PRT9).
[0087] When both are in agreement (PRT10Y), it is judged as an issue success, and printing check data are written in a footer IC chip (410L) (PRT11). Printing check data are data which can derive the content of published contents, such as the contents issue ID 54 of the published contents, here. On the other hand, in Step PRT2, Step PRT4, Step PRT6, Step PRT8, and Step PRT10, when a judgment is "N" respectively, it is issue failure (PRT13).
[0088] As mentioned above, it is detectable in the printing error to produce with carrying out a form feed, while the printing record medium of two or more sheets had shifted and lapped by reading IC chip of two upper and lower sides of an electronic sheet, i.e., a header IC chip and a footer IC chip, and the shell electronic sheet ID at the time of printing, and judging it to be printing failure whether it is the same electronic sheet ID if, and it is judged as a printing success and is not in agreement. [check and]
[0089] Thus, since it is easily [about an error with detection usually difficult by the printer like the printing error produced by performing a form feed while the printing record medium of two or more sheets had shifted and lapped in addition to the error usually detectable by the printer of a paper jam, a toner piece for printing an ink piece, etc. generated within a printer] detectable, in spite of were not able to perform printing and issue normally, failure which takes as having published normally can reduce.
[0090] Although the electronic sheet ID stored in IC chip of two upper and lower sides, i.e., a header IC chip, and a footer IC chip was made into the same thing in this example, if it is set as ID from which the sum of both ID is set to 1 for example, even if it is different ID, it is possible to detect a printing error like the above. In addition, when the data writing to a header IC chip goes wrong, it may print with "failure" etc. to the printing field 451, and you may show clearly to it.
[0091] Moreover, when the data writing to a header IC chip fails in the data writing to a footer IC chip by success, you may print with "failure" etc. to the footer field 453. Even if it could not print with "failure" to the footer field 453, when this electronic sheet is read with printed matter verification equipment and printing check data are not contained in the footer IC chip, this electronic sheet is good also as invalid.
[0092] although IC chip, i.e., a header IC chip, and the footer IC chip were built into two upper and lower sides in this example -- the electronic sheet of one sheet -- the vertical sense and sideways -- what is necessary is just to put IC chip into four places of four directions at least, when making either usable
[0093] (1.8) the accounting method accompanying issue of printed matter -- the disposable-household-electric-appliances seal was a gold note with value equivalent to recovery / processing costs of a disposable-household-electric-appliances article as mentioned above Therefore, in connection with issue of a disposable-household-electric-appliances seal, the payment of money (settlement of accounts) is required. Moreover, even when there is no money-value in the printed matter itself like a disposable-household-electric-appliances seal, payment of money may occur in the form of a commission in printing and issue.
[0094] Drawing 18 is the system which added the accounting system 500 to the printed matter managerial system S1 shown in drawing 4. The accounting system 500 consists of a communication interface 520 with the accounting section 510 which manages accounting, and charges based on the issue information (for example, it consists of 48 at the time of contents 52, contents ID 53, the contents issue ID 54, the printed matter issue server ID (SVID), the printed matter issue client ID (CLID), and the date of issue) transmitted from the printed matter issue server 100. Accounting to those (or it manages) who own a printed matter issue client by grasping the printed matter issue client ID and Contents ID is possible.
[0095] Moreover, what is necessary is to input the purchaser's (or user) identification information, a

credit number, etc., and just to make it charge based on the information, in case printing issue is performed by the printed matter issue client, when performing direct accounting to the purchaser (or user) of printed matter. The timing which performs accounting is after Step RFS2 of drawing 13, after the printed matter issue server 100 receives issue result OFC10A of drawing 10. Moreover, in drawing 18, although the accounting system 500 and the printed matter issue system S2 were used as another system, they may also include the accounting section 510 of the accounting system 500 in the printed matter issue system S2.

[0096] (1.9) Since the disposable-household-electric-appliances seal which the 1st example packed, and was printed and published by this system as mentioned above can perform truth-or-falsehood verification using a printed matter issue system and off-line printed matter verification equipment, everyone can perform truth-or-falsehood verification easily. And the disposable-household-electric-appliances seal which is a gold note can be safely printed and published in places where management of a publisher does not reach, such as a convenience store and a store, by using the electronic sheet which used the general-purpose computer by which the software of the exclusive use which performs printed matter issue processing linked to the network operates, and the general-purpose printer with IC reader writer, and incorporated IC chip as a printing record medium. Even if there is no value as a gold note in the electronic sheet before printing and it is going to forge by stealing an electronic sheet, since an authentication key is in a printed matter issue server, forgery is difficult.

[0097] (2) Explain the traveler's-check issue system which is the 2nd example of a traveler's-check issue system this invention using drawing 19 - drawing 21.

[0098] (2.1) A traveler's check is a travel check about a traveler's check, and it can be used like cash by indicating the signature indicated in the holder signature column at the time of use in the counter signature column. If there is no expiration date, and it has a purchase contract duplicate at the time of purchase (it is also called a purchase application form duplicate or a purchaser duplicate) even if it is lost, it can receive a relapse line.

[0099] Drawing 19 is an example showing the outline of a traveler's check. As for a traveler's check 80, the authentication mark 87 of the holder signature column 81, the counter signature column 82, issue No83, the currency unit 84, the amount of money 85, a publisher 86, and a publisher is printed.

[0100] A traveler's check is giving designs, such as a minute pattern and workmanship, and has prevented forgery, the duplicate, and the alteration. And the unjust use of those other than a traveler's-check purchaser is prevented by signing two places, the holder signature column and the counter signature column, in 2 steps, and publishing a purchase contract duplicate.

[0101] (2.2) When publishing printed matter with to prevent forgery, a duplicate, and an alteration and required like the composition traveler's check of the printed matter managerial system in a traveler's-check issue system preventing the unjust use of those other than a purchaser, the printed matter managerial system by this invention is effective. That is, it becomes possible to prevent the unjust use of those other than a purchaser by recording on the purchase contract duplicate (electronic purchase contract duplicate) which constituted the information which prevents forgery, a duplicate, and an alteration by using an electronic sheet as a printing record medium of a traveler's check, and the purchaser itself can know at the time of purchase from a traveler's check (electronic traveler's check) constituted from an electronic sheet, and an electronic sheet.

[0102] Hereafter, a system configuration and an art are explained. Also about this example, the printed matter managerial system shown in drawing 4 is used.

[0103] (2.3) Explain issue processing of an electronic traveler's check and the issue processing electronic traveler's check of an electronic purchase contract duplicate using drawing 20. In addition, the contents of an electronic traveler's check consist of the data showing the authentication mark 87 of the item in drawing 19, the holder signature column 81, the counter signature column 82, issue No83, the currency unit 84, the amount of money 85, a publisher 86, and a publisher.

[0104] In issue processing of an electronic traveler's check, as shown in drawing 20, an input of an encryption key (it considers as the user encryption key SK4) is received between Step OFC1 and Step OFC2 using the control unit 213 in the issue terminal 210 of the printed matter issue client 200

(UOFC1). And in Step OFC2, issue demand OFC2A' containing the inputted user encryption key SK4 is sent to the printed matter issue server 100.
[0105] On the other hand, in the printed matter issue server 100, the user encryption key SK4 is stored in the issue management DB122 with other data of issue demand OFC2A' in Step OFS4 of the server side printed matter issue processing OFS0. And at Step OFS6, answer OFS6A' which consists of the write-in data WD2 and the authentication key AK2 is sent to the printed matter issue client 200. And it returns to the client side printed matter issue processing OFC0 of drawing 10, and in Step OFC6, it writes in using the user encryption key SK4, a data encryption is performed, and it writes in to an electronic sheet.
[0106] Thus, an electronic traveler's check can be published by the same processing as the case of a disposable-household-electric-appliances seal. And the aforementioned user encryption key SK4 is used simultaneously, and an electronic purchase contract duplicate is printed and published.
[0107] (2.4) Explain verification processing of an electronic traveler's check and an electronic purchase contract duplicate, next verification processing of an electronic traveler's check using drawing 21.
[0108] In verification processing of an electronic traveler's check, as shown in drawing 21, input registration of the user encryption key SK4 of the electronic traveler's check which performs verification is performed from the control unit 304 of printed matter verification equipment 300 (UOCK1). And in Step OCK1, it double-sign-izes using the user encryption key SK4 into which the data read from the electronic traveler's check were inputted. After a decryption verifies an electronic traveler's check by the same processing as the case of a disposable-household-electric-appliances seal.
[0109] When contents are correctly displayed on the display 303 of printed matter verification equipment 300 in the case of an electronic traveler's check, it can judge with this electronic traveler's check being "truth", and a holder can judge with it being a just purchaser. In addition, it is verifiable similarly about an electronic purchase contract duplicate.
[0110] Moreover, the contents printing method to printed matter, the management place of an authentication key, an authentication mark, the composition of an electronic sheet, the effect of the printing / issue method to the electronic sheet and printing / issue error detection, and the accounting method accompanying printed matter issue are the same as that of the case of the 1st example.
[0111] (2.5) the conclusion of the 2nd example -- the traveler's check which can prevent the unjust use of those other than a purchaser can be published by setting up an encryption key, whenever it uses the electronic sheet which used the general-purpose computer linked to the network by which the software of the exclusive use which performs printed matter issue processing operates, and the general-purpose printer with IC reader writer as mentioned above, and incorporated IC chip as a printing record medium and publishes a traveler's check
[0112] (3) although the issue system of a disposable-household-electric-appliances seal made into the example and this invention explained by making the issue system of a traveler's check into an example in the 2nd example in the other 1st examples of an application -- this invention -- the -- restricting -- coming out -- there is nothing, and if the security, the official document, the private document, etc. which are the piece of paper which carried out the publication about the rights and duties on the gold note which has money-value, or the law of property are the case where unjust prevention of forgery, alteration,
[0113] For example, it installs in addition to the place where the contents managed at the contents Management Department 110 of the printed matter issue server 100 are resident card data, and a publisher manages the printed matter issue client for publishing a resident card, and as for this system, the acquisition person of a resident card and a resident card can be employed for it as a resident card issue managerial system, when the public engine which accepts as a certificate holds the printed matter verification equipment for judging truth or falsehood and the effective invalid of a resident card.
[0114] And it installs in addition to the place where the contents managed at the contents Management Department 110 of the printed matter issue server 100, for example are data about a security, and a publisher manages the printed matter issue client for publishing a security, and when the purchaser of a security holds the printed matter verification equipment for judging truth or falsehood and the effective invalid of a security, this system can be employed as an at-home type flotation system.

[0115] Furthermore, the printed matter issue client for publishing a railroad ticket, when the contents managed at the contents Management Department 110 of the printed matter issue server 100, for example are data of a railroad ticket is installed in addition to the place which a publisher manages, and when the purchaser, station employee, and conductor of a railroad ticket hold the printed matter verification equipment for judging truth or falsehood and the effective invalid of a railroad ticket, this system can be employed as a railroad ticket issue managerial system.
[0116] Moreover, it installs in addition to the place where a publisher manages the printed matter issue client for publishing an admission ticket when the contents managed at the contents Management Department 110 of the printed matter issue server 100, for example are data of admission tickets, such as a theater and a theme park, and when the purchaser of an admission ticket and the official in charge in the hall hold the printed matter verification equipment for judging truth or falsehood and the effective invalid of an admission ticket, this system can be employed as an admission ticket issue managerial system.
[0117] The contents Management Department 110 of the printed matter issue server 100 can also treat various contents by connecting with an alien system, for example, a residents ledger system, a security system, or a ticket pin center,large system.
[0118] (4) Use the printed-matter verification equipment 300 which has memorized beforehand the double sign-ized key SK3 which can carry out [double sign]-izing of the data enciphered using the encryption key SK2 held by the same authentication key (authentication key AK3) as the authentication key AK2, a printed-matter issue server, etc. of the electronic sheet 400 which is the printing record medium which incorporated IC chip which can be written by non-contact in the conclusion this invention, and IC chip held by the printed-matter issue server 100. Printed matter verification equipment 300 has the function to provide the IC reader 302 and to perform the above-mentioned IC chip 410 and above-mentioned R/W of an electronic sheet nest.
[0119] With the property in which it cannot write between IC chips if the authentication key which IC reader writer has is not in agreement, printed matter verification equipment Although read-out of the content of IC chip can be performed from the electronic sheet printed proper, i.e., the electronic sheet written in IC chip using the proper authentication key Since read-out of the content of IC chip cannot be performed from the electronic sheet printed unjustly, i.e., the electronic sheet written in IC chip using the mistaken inaccurate authentication key The printed matter verification equipment 300 which is in the relation between the printed matter issue server 100 and off-line like this example can perform easily the truth or falsehood of printed matter, and an effective invalid judgment.
[0120] Thus, since everyone can verify printed matter easily if it has printed matter verification equipment, it is applicable also as a printed matter managerial system which publishes the security and official document which are the piece of paper which carried out the publication about the rights and duties on the gold note which has the money-value which circulates in large quantities, or the law of property, a private document, etc.
[0121]
[Effect of the Invention] According to this invention, since the truth or falsehood of printed matter and an effective invalid judgment can be performed using a printed matter issue system and off-line printed matter verification equipment, anyone can perform easily the truth or falsehood of printed matter, and an effective invalid judgment.
[0122] Moreover, since the electronic sheet which incorporated electronically IC chip which can be written is used by non-contact as a printing record medium according to this invention, the high printed matter of safety can be published to forgery, a duplicate, and an alteration.

[Translation done.]

* NOTICES *

1. This document has been translated by computer.So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3.In the drawings, any words are not translated.

PRIOR ART

[Description of the Prior Art] (1) By development of the Internet, like the issue system of gold notes, such as for example, a concert ticket, and a railroad ticket, an airline ticket, if it is the former, the system constituted from a dedicated line, an exclusive terminal, and an exclusive printer may replace from now on to the Internet which everyone can use, a commercial computer, and the system constituted from a commercial printer.
[0003] Furthermore, it is also going to replace the unrelated system with the system using the network to the system using the Internet conventionally. For example, in the U.S., it is going to be put in practical use by conducting an experiment of an electronic stamp (for example, Neopost, E-Stamp, and StampMaster). The electronic stamp is usable as a postage stamp like the stamp (it considers as a conventional-type stamp) which acquires the money-value information that a stamp charge is expressed through the Internet etc., prints a stamp mark directly on an envelope or a postcard using a commercial personal computer and a commercial printer, and is used for general present.
[0004] It is possible to prevent by tapping and the electronic signature which became, finished and used public-key-encryption technology and shared-key-encryption technology about ******** of the data which may happen when using the network which everyone like the Internet can use, or the electronic authentication. the electronic signature and electronic authentication using the public-key-encryption technology and shared-key-encryption technology in the Internet -- for example .

[Translation done.]

* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] It is the composition of a noncontact IC card, and a non-contact IC card reader / writer.
[Drawing 2] It is the data format and authentication key of IC chip.
[Drawing 3] The example of the printed matter in the 1st example: It is a disposable-household-electric-appliances seal.
[Drawing 4] It is the composition of a printed matter managerial system.
[Drawing 5] It is the composition of a printed matter issue server.
[Drawing 6] It is generation of contents data.
[Drawing 7] It is the composition of a printed matter issue client.
[Drawing 8] It is the composition of printed matter verification equipment.
[Drawing 9] It is an example of a contents display.
[Drawing 10] It is a printed matter issue processing flow in a printed matter issue client.
[Drawing 11] It is a printed matter issue processing flow in a printed matter issue server.
[Drawing 12] It writes in with issue of contents and is data.
[Drawing 13] It is a shelf registration processing flow in a printed matter issue server.
[Drawing 14] It is a printed matter verification processing flow in printed matter verification equipment.
[Drawing 15] It is an example of a verification result display.
[Drawing 16] It is the composition of the electronic sheet which has two IC chips.
[Drawing 17] It is writing / printing processing execution flow when using as a printing record medium the electronic sheet which has two IC chips.
[Drawing 18] It is the composition of the printed matter managerial system which has an accounting system.
[Drawing 19] It is the example (traveler's check) of the printed matter in the 2nd example.
[Drawing 20] It is a part of printed matter issue processing flow in the printed matter issue client in the 2nd example.
[Drawing 21] It is a part of printed matter verification processing flow in the printed matter verification equipment in the 2nd example.
[Description of Notations]
CR [-- Processing which performs grant at the time of the contents date of issue in the contents issue processing CR 0]0 -- Contents issue processing, CR1 -- Processing, CR2 which set up contents issue ID in the contents issue processing CR 0

[Translation done.]

* NOTICES *

1. This document has been translated by computer.So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3.In the drawings, any words are not translated.

CLAIMS

[Claim(s)]
[Claim 1] The information containing a character, a figure, voice, etc. is changed into electronic data with an input unit. The 2nd data which outputs the 1st data contained in the aforementioned electronic data to the paper portion of the paper containing IC chip which formed IC chip [read-out / record and read-out / electronic data / ******] in space, and is contained in the aforementioned electronic data by IC reader writer It records on the aforementioned IC chip of the aforementioned paper containing IC chip. the 2nd data of the above the communication-of-information method using the paper containing IC chip characterized by reading from the aforementioned IC chip by the aforementioned IC reader writer, and outputting the 2nd data which carried out [aforementioned] reading appearance by the output unit according to the kind of data
[Claim 2] Input document data and the document data by which the input was carried out [aforementioned] are changed into an image data. The image data by which conversion was carried out [aforementioned] is printed into the paper portion of the paper containing IC chip. The document data by which the input was carried out [aforementioned] are changed into the electronic data of at least one kind. The electronic data by which conversion was carried out [aforementioned] are recorded on IC portion of the aforementioned paper containing IC chip. The aforementioned electronic data recorded on IC portion of the aforementioned paper containing IC chip are read. the communication-of-information method using the paper containing IC chip characterized by changing into the electronic data of a predetermined form the electronic data which carried out [aforementioned] reading appearance, outputting the electronic data by which conversion was carried out [aforementioned] to the output means according to the kind of the aforementioned electronic data, and processing the electronic data by which conversion was carried out [aforementioned] in a predetermined procedure
[Claim 3] the aforementioned paper containing IC chip is ******** about what stuck IC chip on some usual papers, and IC chip -- the communication-of-information method using paper or the thing which stuck IC chip on the same part as the picture printed by the paper portion of the aforementioned paper containing IC chip, and the paper containing IC chip according to claim 2 characterized by being in ********
[Claim 4] The information which records on the IC chip portion of the aforementioned paper containing IC chip is the communication-of-information method using the paper according to claim 2 containing IC chip characterized by to be at least one of the same contents as the information printed to the paper portion of the aforementioned paper containing IC chip, arbitrary information or the information printed by the paper portion of the aforementioned paper containing IC chip, and the relevant information **s.
[Claim 5] What recorded the information as the information printed by the paper portion of the aforementioned paper containing IC chip that the information recorded on IC chip portion of the aforementioned paper containing IC chip was the same, in a different form, Or the thing which recorded a part of information printed by the paper portion of the aforementioned paper containing IC chip, Or the communication-of-information method using the paper containing IC chip according to claim 2 characterized by the information printed by the paper portion of the aforementioned paper containing IC

chip being at least one of the thing **s which recorded different information.
[Claim 6] The information recorded on IC chip portion of the aforementioned paper containing IC chip is the communication-of-information method using the paper containing IC chip according to claim 2 characterized by being at least one of a character code, voice data, Braille-points data, image data, or the data of a tabular format.
[Claim 7] The communication-of-information method using the paper containing IC chip according to claim 2 characterized by arranging and displaying the information which collected those by which information record was carried out into IC portion of the aforementioned paper containing IC chip, and read and read this information to it from IC portion of each paper containing IC chip on a tabular format.

[Claim 8] The information recorded on IC chip portion of the aforementioned paper containing IC chip The information relevant to the information printed to the paper portion of the aforementioned paper containing IC chip, The information which cannot be especially expressed in a paper portion like voice or a highly minute picture, and a lot of information which cannot be indicated into a paper portion, Or the communication-of-information method using the paper containing IC chip according to claim 2 characterized by being at least one of the information **s which consist of headline information which shows the outline of an informational main part and the aforementioned information main part recorded on the aforementioned paper containing IC chip.
[Claim 9] The communication-of-information method using the paper containing IC chip according to claim 2 characterized by to offer the map which can be used as an information input medium to the equipment which prints a map to the paper portion of the aforementioned paper containing IC chip, records the positional information on the map of the picture of the position where IC was embedded on IC portion, and offers information using positional information.
[Claim 10] The communication-of-information method using the paper containing IC chip according to claim 2 characterized by offering the paper which indicated the television broadcasting race card which can print a television broadcasting race card to the paper portion of the aforementioned paper containing IC chip, can record the information on the program of a position that IC was embedded on IC portion, and can be used as an information input medium to television television equipment or television recording equipment.

[Translation done.]

* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[The technical field to which invention belongs] this invention is concerned with the communication-of-information method, and is concerned with the method of using the paper which was united with an electronic storage like the paper containing IC chip especially, and distributing, delivering, receiving and saving information.
[0002]
[Description of the Prior Art] Drawing a character and drawing on paper, and delivering and receiving them as a method of transmitting information, from the former, is performed widely. Although the communication of information by media other than paper, such as being based on voice, is also possible, paper is the communication-of-information medium which has the function of not only informational transfer but distribution, or preservation, and was excellent also in list nature.
[0003]
[Problem(s) to be Solved by the Invention] However, when a character and drawing were drawn on paper and information was transmitted, there were the following problems.
[0004] Forgery, a postscript, and deletion are [1st] comparatively easy.
[0005] Only a visual-sense healthy person can use for the 2nd.
[0006] It deteriorates, while using an optical copying machine for the 3rd and repeating a copy.
[0007] When computer-processing to the 4th, recognition by special equipments, such as OCR, is required for it.
[0008] The space which indicates [5th] information may be limited.
[0009] It is difficult to restrict those who anyone catches sight of as for the information written [6th] to paper (if it is a visual-sense healthy person), and permit what is seen.
[0010] It is difficult for the 7th to find out a desired thing from a lot of paper.
[0011] The purpose of this invention is to offer the communication-of-information method which combined the information indicated by the paper and the information memorized by the electronic storage.
[0012]
[Means for Solving the Problem] In order to attain the purpose of this invention, in this invention, we decided to adopt the method of using the paper containing IC chip as a means of communication of information, indicating a character and drawing as usual into the paper portion of the paper containing IC chip, and recording the electronic data which express with IC portion the information relevant to the character and drawing which were recorded on the paper portion, and the electronic data showing the information which is completely unrelated.
[0013]
[Embodiments of the Invention] [the fundamental method of this invention] -- the fundamental method for carrying out this invention is shown first An example of the equipment configuration which makes this invention process to drawing 1 is shown as a block diagram. The whole equipment consists of an

input unit 10, a central processing unit 20, storage 30, an output unit 40, and IC reader writer 60. Each connection relation is as being shown in drawing 1 . Here, an input unit 10 is one piece or two or more equipments for changing a character, a configuration, voice, etc. which human being recognizes into the electronic signal which can process a central processing unit 20 like a mouse, a keyboard, and a microphone. Moreover, an output unit 40 is one piece or two or more equipments for changing an electronic signal into the gestalt which human being can recognize like a display, a printer, and a loudspeaker. Moreover, IC reader writer 60 is equipment equipped with either [at least] the function (light function) which records electronic data on a semiconductor IC, or the function (lead function) which reads electronic data from a semiconductor IC. Record or read-out of the electronic data is possible even if IC reader writer does not touch a semiconductor IC.

[0014] In drawing 1 , the portion 1 enclosed with the dashed line shows the paper containing IC chip. The paper containing IC chip shall be the paper which carried IC chip, and the portion of paper and the portion of IC chip should be united. the paper containing IC chip may stick IC chip on some usual papers, and is ******** about IC chip -- you may be paper In drawing 1 , 2 shows the paper portion of the paper containing IC chip, and 3 shows IC portion. However, it is not necessary to dissociate for convenience and to illustrate about these portions, and the structure top does not necessarily need to be separated.

[0015] A usual personal computer and a usual word processor possess an input unit 10, a central processing unit 20, storage 30, and the output unit 40 at least. In such a personal computer and a word processor, the information publication to the conventional paper is realizable by connecting a printer as an output unit 40 and performing the program of document preparation software or drawing software with a central processing unit 20. this invention makes possible record of the electronic data to IC portion of the paper containing IC chip, or read-out of the electronic data from IC portion by adding IC reader writer 50 further.

[0016] The fundamental flow of the method of carrying out this invention to drawing 2 is shown. The flow of this method is roughly divided into two portions. Process in which one records information on the paper containing IC chip, and another are process in which the recorded information is used. The former process is from the "start" of a flow to Step 200, and the latter process is from Step 300 to the "end" of a flow.

[0017] The following steps are processed in the process which records information. First, the thing made into how to emit information at Step 100 or those (below, it doubles and is called an information addresser) who is going to save information inputs document data. The data about a character and the data about drawing are included in document data. Such document data can be inputted using the personal computer and word processor with which document preparation software and drawing software were installed. Data, such as a position of a character and a color, and a character code are included in the data about a character. Data, such as a configuration of drawing, a position of the focus which constitutes drawing, and a color of drawing, are included in the data about drawing.

[0018] Data are changed at Step 110 and Step 130 using the document data inputted at Step 100. At Step 110, the document data inputted at Step 100 are changed into the pixel data of a printing image. That is, every one data of the character contained in document data or drawing is analyzed, and the pixel data of 1 run are created. At Step 130, all or some of document data inputted at Step 100 are changed, and new electronic data are created. Here, convenient conversion is performed to next facilities. Whether it changes into the electronic data of what form does not especially limit. Moreover, you may move to the following step 140 as electronic data new as it is, without changing at all the document data inputted at Step 100. Or what deletes some document data inputted at Step 140, and uses the remaining document data as new electronic data is sufficient.

[0019] At Step 120, it prints into the paper portion 2 of the paper 1 containing IC chip based on the pixel data created at Step 110. At Step 140, the electronic data created at Step 130 are recorded on the IC portion 3 of the paper 1 containing IC chip.

[0020] The flow in which it results [from Step 100] to Step 110 and Step 120 is the same as the flow of the conventional document preparation. Information can be indicated on paper by making these steps

process to the document preparation software and drawing software for personal computers or a word processor, and a printer. this invention enables it to record the electronic data of information and these contents indicated on paper on a form convenient to next facilities by adding Step 130 and Step 140 further.

[0021] Processing of the above step can be made to perform by the equipment configuration shown in drawing 1 . However, a printer needs to be included as an output unit 40 and IC reader writer needs to have the light function.

[0022] Processing of Step 100 is performed through an input unit 10. An information addresser inputs document data through an input unit 10, and a central processing unit 20 receives the document data. A central processing unit 20 once stores the received document data in storage 30 each time. When the output unit 40 contains the display monitor, the content of an input is displayed and it enables it to check.

[0023] A central processing unit 20 performs transform processing of Step 110. A central processing unit 20 reads the document data once memorized by storage 30, and changes them into pixel data. The program for changing is beforehand stored in another field in storage 30, and is performed by a central processing unit 20 beginning to read this serially. A well-known thing shall be used about the algorithm of a conversion program. Step 120 is performed by the printer which an output unit 40 contains. The pixel data which the central processing unit 20 changed and were created are sent to a printer, and a printer prints into the paper portion 2 of the paper 1 containing IC chip based on these pixel data. In addition, central disposal equipment 20 and a printer may share processing of Step 110 and Step 120. For example, when a printer is what can read picture vector data like PostScript, a central processing unit 20 may change document data into picture vector data first, it may send to a printer, and how a printer changes this picture vector data into pixel data, and prints it may be used.

[0024] A central processing unit 20 performs processing of Step 130. A central processing unit 20 is changed into the electronic data of the form which read the document data memorized by storage 30 and was specified beforehand. The program for changing is beforehand stored in another field in storage 30, and is performed by a central processing unit 20 beginning to read this serially. The light function which IC reader writer 50 has performs processing of Step 140.

[0025] the paper containing IC chip which recorded information by the processing so far at Step 200 -- an intention of an information addresser -- being based -- distribution -- or it sends or saves The above is the process which records information.

[0026] The following steps are processed in process in which information is used. Step 300 corresponding to Step 200 hits the beginning of this process first. At Step 300, the distributed paper containing IC chip is received, the sent paper containing IC chip is received, or the saved paper containing IC chip is taken out.

[0027] At Step 310, those who received the paper 1 containing IC chip with which information was recorded, those who received, or those (below, it doubles and is called an information addressee) who took out reads the picture printed by the paper portion 2 by the visual sense, and recognizes the content of the information.

[0028] At Step 320, the electronic data recorded on the IC portion 3 of the paper 1 containing IC chip are read, and it changes into the electronic data of a convenient form at next facilities. Whether it changes into the electronic data of what form does not limit especially here. Moreover, you may move to following Step 330 or following Step 340 as electronic data new as it is, without changing the read electronic data at all. Or some read electronic data are deleted and it is good also considering the remaining electronic data as new electronic data.

[0029] At Step 330, the electronic data changed and created at Step 320 are restored as a certain media which human beings, such as voice and a configuration, can recognize, and an information addressee recognizes the informational content through the media. At Step 340, the informational content is used for other purposes by processing and processing the electronic data changed and created at Step 320.

[0030] The flow from Step 300 to Step 310 is a flow of the communication of information in the conventional paper. this invention is raising the possibility of information practical use while the

communication-of-information method makes it diversified by adding Step 320, Step 330, and Step 340 to this.
[0031] Processing for using the above papers containing IC chip with which information was recorded can be performed by the equipment configuration of the block diagram shown in drawing 1 . That is, the whole equipment consists of an input unit 10, a central processing unit 20, storage 30, an output unit 40, and IC reader writer 50. Each connection relation is as being shown in drawing 1 . However, IC reader writer 50 needs a lead function. Moreover, the input unit 10 in this, a central processing unit 20, and storage 30 may consist of personal computers.
[0032] Equipment is not needed in processing of Step 300 and Step 310. IC reader writer 50 and a central processing unit 20 perform processing of Step 320. IC reader writer 50 sends the electronic data which read electronic data and were read from the IC portion 3 of the paper 1 containing IC chip to a central processing unit 20 by the lead function, and central disposal equipment 20 changes the electronic data. The program for changing is beforehand stored in another field in storage 30, and is performed by a central processing unit 20 beginning to read this serially.
[0033] Processing of Step 330 is performed through an output unit 40. Sending the electronic data which the central processing unit 20 changed at Step 320 to an output unit 40, an output unit 80 outputs electronic data with the gestalt which can be recognized to human being. A central processing unit 20 performs processing of Step 340.
[0034] The above is processing of process in which the information recorded on the paper containing IC chip is used. What is necessary is to return to Step 100 and just to process again process which records information, when information needs to be further added to the paper containing IC chip using information (or edit).
[0035] Below, a concrete example realizable in accordance with the fundamental method of an above-mentioned this invention is given, and it explains in detail.
[0036] The 1st example of [the 1st example] is an example of the method of distributing the villa advertisement which can also tell a visually impaired person information using the paper containing IC chip.
[0037] The example of an equipment configuration for creating a villa advertisement is shown in drawing 3 . A keyboard 1001 shall be provided as an input unit and a display 1002 and a printer 1003 shall be provided as an output unit. Furthermore, a central processing unit 20, storage 30, and the IC writer 1004 are provided. The IC writer 1004 is equipment which has the function (light function) which records data on a semiconductor IC.
[0038] A villa maker shows the flow of the process which creates a villa advertisement to drawing 4 . First, in Step 1100, a villa maker inputs a character string from a keyboard 1001. If the content of an input is received, while outputting a central processing unit 20 to a display 1002 serially, it is made to once hold to storage 30 as a character code train. for example, "-- supposing the character string ****** rare" which is not obtained like this is inputted, the character code train of "82b1, 82a4, 82a6, 82 f1, 82 d6, 82a0, 82c2, 82dc, and 82ea" (the 1st code train is called hereafter) is once stored in storage 30 by hexadecimal expression However, "Shift JIS" was used as a method of coding here. In addition, in this invention, the method of coding is not limited to Shift JIS. Furthermore, supposing a villa maker inputs a kanji conversion demand from a keyboard, it will change into a kanji character code according to a demand. For example, when it is the demand which changes the character string of the aforementioned example for "gathering to a park", a code train is hexadecimal expression, serves as "8cf 6 and 8980, 82 d6, 8 f57, 82dc, and 82ea" (the 2nd code train is called hereafter), and also once stores this code train in storage 30.
[0039] At Step 1101, the code train of [2nd] the character code trains acquired at Step 1100 is changed, and the image data used as a printing image is obtained. The image data for every character called font to another field of storage 30 is stored beforehand, this is read and the whole image data is created. For example, in the 2nd code train of the above-mentioned example, the font corresponding to code 8cf6 is read first, it arranges at a left end, next the font corresponding to a code 8980 is read, it arranges from the left to the 2nd, and, finally the character string "gather to a park" creates like the following the image

data of an image written on space. At Step 1102, a central processing unit 20 transmits this image data to a printer 1003, and performs printing to the paper portion 2 of the paper 1 containing IC chip.
[0040] At Step 1103, the code train of [1st] the character code trains acquired at Step 1100 (character string of only the Japanese syllabary) is changed, and voice data is obtained. The voice data for sound-source equipments later mentioned to another field of storage 30 is beforehand stored for every Japanese syllabary, this is read and the whole voice data is created. For example, in the 1st code train of the above-mentioned example, the voice data corresponding to a code 82b1 is read first, it is made into top voice data, next the voice data corresponding to a code 82a4 is read, and the data is tied to top voice data, and hereafter, voice data is connected one by one and it considers as the whole voice data. At Step 1104, a central processing unit 20 transmits this voice data to the IC writer 1004, and performs record into the IC portion 3 of the paper 1 containing IC chip.
[0041] The example of an equipment configuration for recognizing the content of the villa advertisement created as mentioned above is shown in drawing 5 . Sound-source equipment 1201 is provided as an output unit, and a central processing unit 20, storage 30, and the IC reader 1202 are provided further. The IC reader 1202 is equipment which has the function (lead function) to read data in a semiconductor IC.
[0042] The flow of process in which the content of a villa advertisement is recognized is shown in drawing 6 . First, distribution of a villa advertisement is made at Step 1301. When those who received distribution of a villa advertisement are visual-sense healthy persons, the content (for example, "gather to a park") printed by the villa advertisement by the visual sense at Step 1302 is recognized. In this case, the equipment of drawing 5 is not needed. When a visually impaired person etc. receives distribution of a villa advertisement, it progresses to Step 1303 using the equipment of drawing 5 . At Step 1303, while the IC reader 1202 reads voice data from the IC portion 3 of the paper 1 containing IC chip which is a villa advertisement, it sends to a central processing unit 20. The central processing unit accumulates the received voice data to storage 30. If the IC reader 1202 finishes reading all voice data, a central processing unit 20 will transmit the voice data accumulated in storage 30 to sound-source equipment 1201, and will output voice (the above-mentioned example " ****** rare" which is not obtained like this). At Step 1304, the voice to which the visually impaired person etc. was outputted is heard, and the content of a villa advertisement is recognized.
[0043] As a modification of the 1st example of [the modification 1 of the 1st example], the example which records a character code train on IC portion of the handbill for visually impaired persons is explained. The flow of the creation process of a handbill is shown in drawing 7 . The equipment configuration to carry out is the same as that of drawing 3 , and is good. A character code train is first inputted from a keyboard 1001 at Step 1401. At Step 1402, an input character string is changed into image data, this image data is transmitted to a printer 1003 at Step 1403, and it prints into the paper portion 2 of the paper 1 containing IC chip. Steps 1401, 1402, and 1403 are the same as Steps 1100, 1101, and 1102 of drawing 4 of the 1st example respectively. At Step 1404, the character string (the aforementioned example 1st character code train) inputted at Step 1401 is recorded on the IC portion 3 of the paper 1 containing IC chip through the IC writer 1004 as it is.
[0044] The flow which recognizes the content in response to a handbill to drawing 8 is shown. In drawing 5 , as for the equipment configuration to carry out, the portion of sound-source equipment 1201 should replace the voice synthesizer (what receives the input of a character code). Distribution of a handbill is received at Step 1501. At Step 1502, a visual-sense healthy person etc. looks at the content of printing of the paper portion of a handbill, and recognizes information. Steps 1501 and 1502 are the same as Steps 1301 and 1302 of drawing 6 of the 1st example respectively. At Step 1503, a central processing unit 20 reads the character code recorded on IC portion of a handbill from the IC reader 1202, and is once accumulated to storage 30. Furthermore, this accumulated character code is transmitted to a voice synthesizer, and voice is generated. At Step 1504, a visually impaired person etc. hears voice and recognizes the content of a villa advertisement.
[0045] The example using Braille points is explained as another modification of the 1st example of [the modification 2 of the 1st example]. The flow of the creation process of a handbill is shown in drawing

9 . The equipment configuration to carry out is the same as that of drawing 3 , and is good. An alphabetic data and drawing data are first inputted from a keyboard 1001 (or mouse) at Step 1601. At Step 1602, the inputted data are changed into image data, this image data is transmitted to a printer 1003 at Step 1603, and it prints into the paper portion 2 of the paper 1 containing IC chip. Steps 1601, 1602, and 1603 are the same with printing a document using usual drawing software and usual document preparation software. At Step 1604, the data inputted at Step 1601 are recorded on the IC portion 3 of the paper 1 containing IC chip through the IC writer 1004 as it is.
[0046] The flow which recognizes the content in response to a handbill to drawing 10 is shown. In drawing 5 , as for the equipment configuration to carry out, the portion of sound-source equipment 1201 should replace the Braille-points printer. Distribution of a handbill is received at Step 1701. At Step 1702, a visual-sense healthy person etc. looks at the content of printing of the paper portion of a handbill, and recognizes information. Steps 1701 and 1702 are the same as Steps 1301 and 1302 of drawing 6 of the 1st example respectively. At Step 1703, a central processing unit 20 reads the data recorded on IC portion of a handbill from the IC reader 1202, and is once accumulated to storage 30. Furthermore, a central processing unit 20 changes the accumulated data into Braille-points data. the program for changing is beforehand stored in storage 30, and a central processing unit 20 shall carry out reading appearance of this program serially, and shall perform it At Step 1704, the changed Braille-points data are transmitted to a Braille-points printer, and Braille-points printing is carried out. At Step 1504, when a visually impaired person etc. touches the paper by which Braille-points printing was carried out, the content of a villa advertisement is recognized.
[0047] The 2nd example of [the 2nd example] is an example of the method of creating a product catalog using the paper containing IC chip, and simplifying collection and arrangement of product specification data.
[0048] The flow of the method of creating the product catalog of the paper containing IC chip to drawing 11 is shown. This method is realizable using the equipment configuration of drawing 3 shown in the 1st example. First, the information indicated to a catalog at Step 2101 is inputted. These are performed with a central processing unit 20, a character and a configuration are inputted from the keyboard 1001 with a mouse, or the picture prepared beforehand is specified [document preparation software, drawing software, tabulation software etc. are beforehand installed in storage 30,], and the pattern and character of catalog space are created. With the aforementioned software, the pattern and character which were created are displayed on a display 1002 each time, and can be checked.
[0049] At Step 2102, a central processing unit 20 changes into image data the pattern and character which were created at Step 2101, and it once stores in storage 30. At Step 2103, a central processing unit 20 takes out this image data from storage 30, transmits to a printer 1003, and prints into the paper portion 2 of the paper 1 containing IC chip. Processing of Step 2102 and Step 2103 is also performed by the program of the aforementioned software.
[0050] The example of the catalog picture printed to drawing 12 is shown. In this example, a catalog picture consists of Table 2201 about the specification of a product, the picture 2202 of the object photograph of a product, and other character strings. That is, it means inputting the front data about product specification, the image data of the object photograph of a product, and other character-string data at Step 2101. Moreover, the detail of Table 2201 about product specification is shown in step drawing 13 . A table can consist of an item and a value and can be created with tabulation software.
[0051] At Step 2104, a central processing unit 20 changes the aforementioned table into the data of XML (eXtensible Markup Language) form. The changed data are once stored in storage 30. In addition, the specification of XML is opened to http: of WWW//www.w3.org/TR/PR-xml -971208. Based on this specification, the example which changed the table of drawing 13 is shown in drawing 14 . However, this invention may not be limited to XML form and other form of having followed the fixed rule may be used.
[0052] At Step 2105, a central processing unit 20 transmits the data of the aforementioned XML form, and the data of catalog information inputted at the aforementioned step 2101 to the IC writer 1004, and records on the IC portion 3 of the paper 1 containing IC chip. The above is the process which creates a

product catalog.
[0053] The flow of the process which collects catalogs to drawing 15 and carries out product comparison is shown. The catalog which usually collected catalogs at Step 2301 first, and were collected at Step 2302 is compared to collect the catalogs of a congener product and perform comparison and examination of a product. Equipment is not needed at this time. However, ****** will become difficult if the number of catalogs increases in this case. Then, Step 2303 - Step 2305 are processed with the equipment of composition as shown in drawing 16 .
[0054] First, the product catalogs made from the paper containing IC chip created by the aforementioned method are collected at Step 2301. At Step 2303, the data currently recorded on IC portion of a product catalog are read from the IC reader 1202. A central processing unit 20 receives this data, and once stores it in storage 30.
[0055] At Step 2304, a central processing unit 20 takes out and analyzes only the XML formal data of the specification about the product parameter of the aforementioned data. The portion, < power consumption which were inserted, for example by the <model name> and the </model name> by the data of drawing 14 supposing it was determined that the data of the model name of a product, power consumption, and a price were displayed on the high order of a price Unit = the portion, < price which were inserted by "W" > and </power consumption> Unit = the portion pinched at "circle" > and a </price> is extracted. That is, "HD33221100BP987", "1.5", and "10000" are extracted, respectively. It carries out also about the data of the product catalog with which others collected such processings. These extracted data are expressed in the high order of a price as Step 2305 side by side. The example of a display result is shown in drawing 17 .
[0056] Although the above-mentioned example explained as what the display item and the display format are beforehand set to, this invention is not limited to this and you may enable it to specify the item and display format which are displayed from a keyboard 1001.
[0057] The 3rd example of [the 3rd example] is an example of the method of drawing up distributivity documents using the paper containing IC chip. Distributivity documents point out the document exchanged between two or more companies or its post, and various kinds of application forms and contracts are the example of representation here. Here, the documents used by foreign-trade-finance dealings are explained to an example. In foreign-trade-finance dealings, most information which two or more intervention persons, such as a bank, an insurance company, a shipping company and an airline, a customs broker, and a customhouse, exist, and various documents are exchanged among the intervention person including the exporter and the importer, and is indicated by the documents has many which are used in common among two or more documents. In case new documents are drawn up, it inputs into DB in the method of newly typing the content indicated by the documents previously sent by other intervention persons, while checking by viewing, once and its company, and its self-post, and the method of printing through a printer etc. is taken again. However, a posting mistake, an input mistake, etc. from which the work by viewing becomes a cause will have occurred, and the aforementioned method will take time and effort, time, etc. as a result in the case of distributivity preparation and transfer. In the 3rd example, in order to cut down this posting mistake and input mistake, how to use the paper containing IC chip is shown in distributivity documents.
[0058] The example of an equipment configuration for drawing up distributivity documents is shown in drawing 18 . A keyboard 3001 shall be provided as an input unit and a display 3002 and a printer 3003 shall be provided as an output unit. Furthermore, a central processing unit 20, storage 30, and IC reader writer 3004 are provided. IC reader writer 3004 is equipment which has the function (light function) which records the function (lead function) and data which read data from a semiconductor IC.
[0059] The flow of process in which a distributivity documenter draws up documents is shown in drawing 19 . First, in Step 3100, a distributivity documenter inputs a character string from a keyboard 3001. If the content of an input is received, while outputting a central processing unit 20 to a display 3002 serially, it is made to once hold to storage 30 as a character code train. About the method of storing the inputted character string in storage here and the method of coding, and the inputted conversion method (kanji conversion as an example) of a character string, it is the same as that of the 1st example.

[0060] At Step 3200, the character code train acquired at Step 3100 is changed, and the image data used as a printing image is obtained. The method of storing beforehand the image data for every character called font to another field of storage 30, reading this, and creating the whole image data is the same as that of the 1st example.
[0061] At Step 3300, a central processing unit 20 transmits this image data to a printer 3003, and performs printing to the paper portion 2 of the paper 1 containing IC chip.
[0062] At Step 3400, the character code train acquired at Step 3100 is memorized into the IC portion 3 of the paper 1 containing IC chip through IC reader writer 3004 as it is.
[0063] Here, the detailed flow of the character code train input of Step 3100 is shown in drawing 20 . First, the existence of keyboard 3001 refernce data is inputted in Step 3110. Here, reference data point out the information quoted from other documents among various kinds of information which should be indicated on the distributivity documents used as the candidate for creation. The search key item which is needed in case reference data are chosen, when there are reference data is also doubled, and it inputs. As an example of a search key, there are a trade target product name, an exporter name, an importer name, etc.
[0064] The existence of reference data is judged at Step 3120.
[0065] At Step 3130, reference data are read from storage 30 based on a search key.
[0066] At Step 3140, reference data are transmitted to a central processing unit 20.
[0067] At Step 3150, an insufficiency character code (data other than reference data) is inputted from an input unit 3001 among various kinds of information which should be indicated on the distributivity documents used as the candidate for creation.
[0068] Further, in case reference data are read in Step 3130, it becomes possible to choose reference data automatically by using the mapping table having shown the relation of the item between documents here. The example of a mapping table is shown in drawing 21 . It consists of the creation document name 3131, a subject name 3132, a reference document name 3133, a reference subject name 3134, etc.
[0069] Moreover, a screen image just before inputting an insufficiency character code at Step 3150 is shown in drawing 22 . About the information which can be quoted from the existing document among data required to draw up the document concerned, it is already input ending using the mapping table shown in drawing 21 .
[0070] The image of the final paper containing IC chip in drawing 19 , i.e., printing to a paper portion, (Step 3300), and the thing in the state where each step of record (Step 3400) of a character code train into IC portion was ended are shown in drawing 23 . Although the thing equivalent to the information currently printed by the space of the paper portion 2 of the paper 1 containing IC chip is printed by the IC portion 3 of the paper 1 containing IC chip, it does not necessarily need to be completely the same. When the information stored in the IC portion 3 is the digest of the information currently printed by space, or when [that] reverse, you may record the information about your company and your post which delivered and made distributivity documents the IC portion 3 etc. Moreover, as long as the storing method to the IC portion 3 can distinguish the information stored, it may be what method. For example, as shown in the 2nd example, it may be data of XML form, and when informational record sequence is defined beforehand, it is good also by methods, such as a Comma Separated Value (comma break).
[0071] Here, the storing method of the reference data used in drawing 20 is shown briefly. When documents are received from other companies or their post, the information currently recorded on the IC portion 3 is read into a central processing unit 20 using IC reader writer 3004 shown in drawing 18 , and this is stored in storage 30.
[0072] The 4th example of [the 4th example] is an example of the method of enabling it to acquire and use from paper the information (for it to consider as related information hereafter) relevant to information given in paper, the information which cannot be especially expressed in papers, such as voice and a highly minute picture, and a lot of information which cannot be indicated on paper using the paper containing IC chip.
[0073] The composition of the equipment used when an information addressee uses the related information of space written information for drawing 24 in this example, and an example of an

information flow are shown. The paper 1 containing IC chip is the paper 1 containing IC chip of drawing 1 , and has the paper portion 2 and the IC portion 3. The IC reader 4140 is equivalent to IC reader writer 30 of drawing 1 connected with the information output unit 4142 by communication media 4141. The IC reader 4140 reads electronic data from the IC portion 3 of the paper 1 containing IC chip, and although it has the function transmitted to the information output unit 4142 through communication media 4141, it does not need to have the electronic data-logging function to IC. Communication media 4141 are used in order to perform data communication among two or more equipments regardless of a cable and radio, such as RS-232C, USB, IEEE1394, IrBus, and TVIR, and they are well-known. The information output unit 4142 is the central processing unit 20 of drawing 1 , the storage 30, and the information processor possessing an output unit 40 which were connected with the IC reader 4140 by communication media 4141, for example, is a personal computer and television equipped with the loudspeaker for outputting the display for displaying a picture and a character as an output unit 40, and voice. The information output unit 4142 receives the electronic data of the IC portion 3 of the paper 1 containing IC chip from the IC reader 4140 through communication media 4141, and has the function outputted to an output unit 40. The information addressees 4143 are those who acquire information from the paper 1 containing IC chip, they read visually about the information printed by the paper portion 2, recognize the contents of information, and recognize the contents of information through the output of the information output unit 4142 about the information recorded on the IC portion 3.

[0074] An example of the paper containing IC chip of this example is shown in drawing 25 .

[0075] The paper 4150 containing IC chip is the paper 4151 in which the information on "ecology of a bird" was indicated by space, and two or more IC chips (IC4153, IC4155) are embedded. On the space of paper 4151, visible information, such as the photograph 4152 of a bird and an explanatory note 4154, is indicated. IC4152 is embedded in the position where the photograph 4152 of the bird which is IC chip which recorded the "cry of a bird" (voice data) which is the related information of the photograph 4152 of a bird, and is the space written information that it corresponds was printed. Similarly, IC4155 is IC chip which recorded the "photograph of a habitat" (image data) which is the related information of an explanatory note 4154, and is embedded in the position where the explanatory note 4153 was printed.

[0076] In addition, in drawing 25 , although IC chip is embedded for every related information, IC chip may be one and the form where two or more meanses (antenna portion) by which IC reader and data communicate are given is sufficient as it. In this case, what is necessary is to specify the antenna with which IC chip is communicating with IC reader, and just to pass the data depending on the position to IC reader.

[0077] The flow of the creation process of the paper containing IC chip of this example is shown in drawing 26 .

[0078] Drawing 26 applies "from the start" which is the process which records information on the paper 1 containing IC chip among the fundamental flows of this invention shown in drawing 2 to the step 200 to this example. Hereafter, the process which records information on the paper 1 containing IC chip of this example is explained using the flow of drawing 26 .

[0079] Step 4000 is equivalent to Step 100 of drawing 2 , and inputs the data of the information which an information provider prints into the paper portion 2 of the paper 1 containing IC chip. Printed information data do not need to be electronic-filing-document data created with the personal computer etc. using document preparation software, drawing software, etc., and it can be easy to change them into the pixel data for printing. For example, the data inputted using an input unit like the scanner which can incorporate the space written information on printed matter as image data are sufficient.

[0080] Step 4010 is equivalent to Step 110 of drawing 2 , and the data inputted at Step 4000 are changed into the pixel data of a printing image. Step 4020 is equivalent to Step 120 of drawing 2 , and prints into the paper portion 2 of the paper 1 containing IC chip based on the pixel data created at Step 4010.

[0081] Step 4030 is equivalent to Step 100 and Step 130 of drawing 2 , and inputs the data of related information which an information provider records on the IC portion 3 of the paper 1 containing IC chip. Related information data are electronic-filing-document data created using document preparation software, drawing software, etc., and form will not be limited if the information which distinguishes the

form of electronic data, such as a file extension and a MIME type, is included. For example, two or more things like the image data of form, such as voice data of form, such as character-string data expressed by character codes, such as JIS and UNICODE, and WAV, AIFF, GIF, and a JPEG picture, and they are summarized.

[0082] Step 4040 is equivalent to Step 140 of drawing 2 , and records the electronic data created at Step 4030 on the IC portion 3 of the paper 1 containing IC chip.

[0083] In addition, in the case of the paper containing IC chip which embedded two or more IC chips, Step 4030 and Step 4040 are repeated only for the number of IC chips like the paper 4150 containing IC chip of drawing 25 .

[0084] The paper 1 containing IC chip which recorded related information is created by the above process. Moreover, the above process can be made to perform by the equipment configuration shown in drawing 1 like the process which records information on the paper 1 containing IC chip of drawing 2 .

[0085] The flow of the process of the information use of the paper containing IC chip of this example to drawing 27 is shown.

[0086] Drawing 27 applies from Step 300 which is process in which the information recorded on the paper containing IC chip among the fundamental flows of this invention shown in drawing 2 is used to the "end" to this example. Hereafter, process in which the information on the paper containing IC chip of this example is used is explained using the flow of drawing 27 .

[0087] Step 4110 is equivalent to Step 310 of drawing 2 , and the information addressee 4143 reads the picture printed by the paper portion 2 of the paper 1 containing IC chip by the visual sense, and recognizes the content of the information.

[0088] Step 4120, Step 4121, Step 4123, and Step 4125 are equivalent to Step 320 of drawing 2 . First, at Step 4120, the IC reader 4140 reads the related information electronic data recorded on the IC portion 3 of the paper 1 containing IC chip, and transmits to the information output unit 4142 through communication media 4141. The information output unit 4142 which received electronic data distributes future process by the difference in the media of electronic data.

[0089] When electronic data are voice data, the information output unit 4142 is changed and outputted to the form which can output voice data to the output unit (loudspeaker) of voice output correspondence at Step 4121. Consequently, the information addressee 4143 can recognize the content (voice) of related information at Step 4122.

[0090] When electronic data are image data, the information output unit 4142 is changed and outputted to the form which can output image data to the output unit dealing with a picture output (display) at Step 4123. Consequently, the information addressee 4143 can recognize the content (picture) of related information at Step 4124.

[0091] Refer to the content of the space written information recorded on the paper containing IC chip, and its related information for the information addressee 4143 by the above process.

[0092] If the paper 4150 containing IC chip of drawing 25 is made into an example, the information addressee 4143 will recognize the information on "the ecology of a bird" given in space first (Step 4110). Next, if the IC reader 4140 is brought close to the position where the photograph 4152 of a bird was printed, the IC reader 4140 will read "cry of bird" electronic data from IC4152 which recorded the "cry of a bird" currently embedded in near, and will transmit to the information output unit 4142. The information output unit 4142 will be distinguished from the data-format information included in the received electronic data, if this data is voice data (so far step 4120), and it is changed and outputted to the form which can output data to a loudspeaker (Step 4121). The information addressee 4143 recognizes the speech information of "the cry of a bird" as related information of the photograph 4152 of a bird (Step 4122). Moreover, if the IC reader 4140 is brought close to the position where the explanatory note 4154 was printed, the IC reader 4140 will read shell "photograph of habitat" electronic data to IC4155 which recorded the "photograph of a habitat" currently embedded in near, and will transmit to the information output unit 4142. The information output unit 4142 will be distinguished from the data-format information included in the received electronic data, if this data is image data (so far step 4120), and it is changed and outputted to the form which can output data to a display (Step

4123). The information addressee 4143 recognizes the image information of "the photograph of a habitat" as related information of an explanatory note 4154 (Step 4124).
[0093] The above process can refer "ecology of bird" information which is space written information and "the cry of a bird" which is the related information, and "the photograph of a habitat" in the example of the paper 4150 containing IC chip of drawing 25 .
[0094] In addition, in explanation of the above-mentioned flow, although only the processing about voice and a picture was shown as media of electronic data, an alphabetic data, image data, etc. can process similarly other media which can record on IC chip and can be outputted by the information output unit 4142 in the flow of drawing 27 .
[0095] In addition, although the IC reader 4140 transmitted electronic data to the information output unit 4142 immediately in old explanation when it read electronic data from IC chip After reading electronic data and setting during fixed time called the 0.5-second and 1-second back, it is made to transmit to the information output unit 4142. By giving before outputting to the information output unit 4142, while separating the IC reader 4140 from IC chip, an information addressee can select now the electronic data outputted to the information output unit 4142. Moreover, an effect with the same said of outputting during fixed time to an output unit in the direction of the information output unit 4142, after receiving electronic data is acquired.
[0096] In addition, although the IC reader 4140 transmitted electronic data to the information output unit 4142 immediately when it read electronic data from IC chip, it is making it transmit, when the IC reader's 4140 is equipped with a button or a switch and an information addressee's pushes it, and choice of transmission of an information addressee of electronic data comes to be able to do it in old explanation. Moreover, by equipping the IC reader 4140 with a means, for example, a means to shine, to make sound or to vibrate, to tell an information addressee about having approached IC chip until read-out of electronic data becomes possible, an information addressee can know now in which space written information electronic data (related information) exist, and this is also assistance [choice / of electronic data transmission].
[0097] The external view of an example of IC reader which carried out expansion to drawing 28 as mentioned above is shown.
[0098] The IC reader 4160 is a pen configuration and the electronic data of IC chip can be read by bringing a nib close to IC chip embedded on the paper containing IC chip. The button 4161 for determining read-out of the electronic data of IC chip and transmission to an information output unit as pen width and a nib and a button 4162 are equipped, and the tail of a pen is equipped with the notice section 4163 which notifies that IC chip in which electronic data read-out is possible exists.
[0099] The equipment configuration view of the pen configuration IC reader 4160 is shown in drawing 29 .
[0100] The data lead section 4170 is a means for reading electronic data from IC chip, and the data transmitting section 4172 is a means for transmitting electronic data to an information output unit. This IC reader usual [two] possesses.
[0101] It is the made means which can notify to other meanses that the button section 4171 was pushed on the information addressee, and the notice section 4173 is a means by which light, sound, and vibration can be generated using Light Emitting Diode, a sound source and a loudspeaker, and a motor.
[0102] The processing flow of the pen configuration IC reader 4160 is shown in drawing 30 .
[0103] The processing shown by the flow of drawing 30 corresponds to the electronic data read-out process which is a part of step 4120 of drawing 27 . Hereafter, execution operation of the pen configuration IC reader 4160 is explained using the flow of drawing 30 .
[0104] At Step 4200, the pen configuration IC reader 4160 communicates the pre-preparation of IC chip and electronic data read-out whose communication was attained by having approached first.
[0105] At Step 4210, the pen configuration IC reader 4160 is changing the state of the notice section 4163, and notifies that IC chip which can read electronic data exists to the information addressee 4143. This is realized by making the input of the data lead section 4170 reflect in the notice section 4173.
[0106] At Step 4220, it distinguishes whether the button 4161 or button 4162 of the pen configuration

IC reader 4160 was pushed, when pushed, it progresses to Step 4230, and when that is not right, it progresses to Step 4250.
[0107] At Step 4230, the pen configuration IC reader 4160 reads electronic data from IC chip, and in continuing Step 4240, the pen configuration IC reader 4160 transmits electronic data to the information output unit 4142, and it finishes processing.
[0108] On the other hand, at Step 4250, it separated from IC chip, or (did it become IC chip and communication impotentia?) when distinction of how is performed and it separates, processing is ended, and the pen configuration IC reader 4160 returns to Step 4210, when that is not right.
[0109] By the above processing, the information addressee 4143 can select now the related information which can know in which written information on space related information exists using the pen configuration IC reader 4160, and is outputted by the information output unit 4142.
[0110] If the paper 4150 containing IC chip shown by drawing 25 is made into an example, when the information addressee 4143 brings the pen configuration IC reader 4160 close to the position where the photograph 4152 of a bird was printed, it will communicate with IC4152 which recorded the "cry of a bird" embedded in near (Step 4200). Then, in order to notify that IC chip which can read electronic data exists in the photograph 4152 of a bird, the state of the notice section 4163 of the pen configuration IC reader 4160 changes (Step 4210 (for example, it shines)). If the information addressee 4143 pushes the button 4161 of the pen configuration IC reader 4160 (Step 4220; Yes), the electronic data of "the cry of a bird" will be read from IC4152 (Step 4230), it will transmit to the information output unit 4142 (Step 4240), and processing will be finished. The information addressee 4143 does not push the button 4161 of the pen configuration IC reader 4160 (Step 4220; No), but when the pen configuration IC reader 4160 is separated from IC4152 in the photograph 4152 and position of a bird (Step 4250; Yes), processing finishes.
[0111] By the above processing, the information addressee 4143 can select now the related information which can know whether related information exists in the photograph 4152 of a bird, and is outputted by the information output unit 4142 in the example of the paper 4150 containing IC chip of drawing 25 .
[0112] In addition, in explanation of the above-mentioned flow, although electronic data are read from IC chip and it transmits to the information output unit 4142 after a button is pushed, after a button is pushed, it may only be made for the IC reader 4160 to read electronic data from IC chip previously, and to transmit. In this case, when transmitting electronic data, the IC reader 4160 may come to be separated from IC chip. In this case, Step 4250 of the processing flow of drawing 30 is not only processed.
[0113] Moreover, in explanation of the above-mentioned flow, although it is considering as the thing of the pen configuration equipped with a button and the notice section 4173, as long as the IC reader 4160 is equipped with a button and the notice section, what configuration is sufficient as it.
[0114] Moreover, in explanation of the above-mentioned flow, although it is equipped with a button and the notice section 4173, as long as the need [neither of IC reader 4160 / the function which notifies existence (existence of related information) of IC chip which can read electronic data], the notice section may omit it. In this case, Step 4210 of the processing flow of drawing 30 is not only processed. Moreover, although the IC reader 4160 has equipped two buttons, the processing flow of drawing 30 does not depend on the number of buttons, but it can apply it to it.
[0115] Moreover, although the notice section 4173 for notifying existence (existence of related information) of IC chip which can read electronic data is given to the IC reader 4160 in the above-mentioned flow explanation, a means to notify communication with IC reader to the direction of IC chip is added, and you may make it notify existence of related information to the information addressee 4143.

[0116] In addition, although the related information recorded on IC chip was considering as singular media data in old explanation, you may record two or more media data. In this case, it enables the information addressee 4143 to refer to the related information of rich power of expression by two or more media.
[0117] The example of an output screen in the information output unit of the related information using two or more media data is shown in drawing 31 .

[0118] The related information 4190 shown by drawing 31 should be recorded on IC4155 as related information of the explanatory note 4154 of the paper 4150 containing IC chip shown by drawing 25 . Related information 4190 combines two or more media, such as "photograph of habitat" 4191, "explanatory note of habitat" 4192, and other information, and is outputted as a picture which combined on the display of the information output unit 4142.
[0119] An example of the content of IC chip which recorded two or more electronic data which constitute the related information 4190 of space written information on drawing 32 is shown.
[0120] The related information data 4180 in IC chip consist of electronic data of two or more media, such as the layout information 4181 which specifies the output layout of two or more media electronic data, the electronic data 4182 of "explanatory note of habitat" 4192, the electronic data 4183 of "photograph of habitat" 4192, and other data. The layout information 4181 is described in the language which specifies the output layout of two or more media like HTML (HyperText Markup Language).
[0121] The flow of the process of the related information use which contained two or more electronic data of the paper containing IC chip in drawing 33 is shown. Drawing 33 has added Step 4310 which reads and memorizes layout information to the flow shown in drawing 27 . Moreover, Step 4121 which performs conversion of electronic data and the output to the corresponding output unit, Step 4122, Step 4123, and Step 4124 are summarized to Step 4320. Moreover, it has changed so that a loop may be carried out until it connects with Step 4300 and Step 4310 and Step 4320 output all electronic data, in order to treat two or more electronic data. Hereafter, process in which the information on the paper containing IC chip of this example is used is explained using the flow of drawing 33 .
[0122] Like Step 4120 of drawing 27 , Step 4300 reads one related information electronic data from the paper 1 containing IC chip from the IC reader 4140, and distributes future processings by the difference in the media of electronic data.
[0123] When electronic data are layout information, at Step 4310, the information output unit 4142 saves layout information at storage temporarily, and returns to Step 4300.
[0124] If it is the output unit corresponding to [in the information output unit 4142 / data / electronic / the case of media data, such as voice and a picture,] media at Step 4320, for example, voice, if it is a loudspeaker and a picture, it changes into the form which can be outputted to a display, and it outputs based on layout information [finishing / reading], and returns to Step 4300.
[0125] When finishing reading all electronic data, the output of related information is completed, consequently it is Step 4330, and the information addressee 4143 can recognize the contents of the related information expressed combining two or more media.
[0126] The above process enables the information addressee 4143 to refer to the contents of the related information expressed by two or more media recorded on the paper containing IC chip.
[0127] If the information addressee 4143 brings the IC reader 4140 close to the position where the explanatory note 4154 was printed when the paper 4150 containing IC chip shown by drawing 25 was made into the example, the IC reader 4140 will read the layout information 4181 first among the contents 4180 of IC4155 currently embedded in near, and will transmit to the information output unit 4142. The information output unit 4142 distinguishes the received electronic data from layout information (so far step 4300), and saves data at storage (Step 4310). Continuing, the IC reader 4140 reads the electronic data 4182 of "explanatory note of habitat" 4192 from IC4155, and transmits to the information output unit 4142. The information output unit 4142 is changed and outputted to the form which can output data to a display according to the layout information which distinguished the received electronic data from the alphabetic data (so far step 4300), and was saved at Step 4310 (Step 4320). Continuing, the IC reader 4140 reads the electronic data 4183 of "photograph of habitat" 4191 from IC4155, and transmits to the information output unit 4142. The information output unit 4142 is changed and outputted to the form which can output data to a display according to the layout information which distinguished the received electronic data from image data (so far step 4300), and was saved at Step 4310 (Step 4320). Such a process is repeated, if it finishes outputting all the electronic data contained in the contents 4180 of IC4155 (Step 4300), the output of related information 4190 will be completed, consequently it is Step 4330, and the information addressee 4143 can recognize the contents of the

related information 4190 expressed combining two or more media.
[0128] The above process enables the information addressee 4143 to refer to the contents 4180 of the related information 4190 expressed by two or more media recorded on the paper 4150 containing IC chip.
[0129] In addition, after reading two or more electronic data collectively, it collects according to layout information and you may make it output the information output unit 4142 in explanation of the above-mentioned flow, although it is beginning to read every one electronic data which constitutes related information from IC chip and being outputted to the output unit. In this case, at Step 4320, conversion of electronic data and preservation to storage will be performed, and the step of outputting the electronic data which were saved at storage in the "end" of Step 4300 will be added. Moreover, at this step, when layout information is described by HTML, well-known software like the WWW (World Wide Web) browser which is a browser which outputs electronic data according to HTML can also be used.
[0130] Moreover, although the information output unit 4142 was outputting the electronic data which constitute the related information acquired from IC chip according to the layout information acquired from IC chip, the information output unit 4142 holds layout information beforehand to storage, and you may make it output the electronic data of IC chip in explanation of the above-mentioned flow according to it. In this case, layout information does not necessarily need to be recorded on IC chip.
[0131] In addition, although all the electronic data that constitute the related information of space written information from old explanation needed to be recorded on IC chip currently embedded in the position where space written information was printed The link information which shows the whereabouts of electronic data to IC chip instead of electronic data, For example, you may make it record a thing called URL which can access it by the electronic data on a CD-ROM drive in the electronic data on the pathname of the file which it stores, and an external WWW server.
[0132] The composition of the equipment used into the electronic data which constitute the related information of the above papers containing IC chip in drawing 34 when the electronic data of the exterior which is not recorded with IC chip are used and an information addressee uses the related information of space written information, and an example of an information flow are shown.
[0133] The equipment configuration view of drawing 34 connects external storage 4144 like a CD-ROM drive and a DVD-ROM drive to the information output unit of the equipment configuration view of drawing 24 , and connects it to it through a communication line like the information storage server 4145 which is an information server of the exterior which accumulates and distributes various information, and the Internet.
[0134] An example of the content of IC chip which recorded the link information to two or more electronic data and the external electronic data which constitute the related information 4190 of space written information on drawing 35 is shown. IC -- a chip -- inside -- data -- 4430 -- drawing 32 -- having been shown -- IC -- a chip -- a content -- 4180 -- "-- a habitat -- a photograph -- " -- 4191 -- an electron -- data -- 4182 -- external storage -- storing -- having had -- a file -- a file name -- " -- Photo . -- jpg -- " (4433) -- ** -- carrying out . That is, it consists of electronic data of two or more media, such as the layout information 4431 which specifies the output layout of two or more media electronic data, the electronic data 4432 of "explanatory note of habitat" 4192, the link information 4433 of "photograph of habitat" 4192, and other data.
[0135] The flow of the process of the related information use in the case of using the electronic data of the exterior which is not recorded with IC chip in the electronic data which constitute the related information of the paper containing IC chip in drawing 36 is shown. Drawing 36 has added Step 4840 which uses a link information for the flow shown in drawing 33 , and acquires electronic data from external storage 4144 or the information storage server 4155, and Step 4850 which performs conversion of electronic data and the output to the corresponding output unit. Hereafter, process in which the information on the paper containing IC chip of this example is used is explained using the flow of drawing 36 .
[0136] Like Step 4300 of drawing 33 , Step 4800 reads one related information electronic data from the paper 1 containing IC chip from the IC reader 4140, and distributes future processings by the difference

in the media of electronic data.
[0137] When electronic data are layout information, at Step 4810, the information output unit 4142 saves layout information at storage temporarily, and returns to Step 4800.
[0138] If it is the output unit corresponding to [in the information output unit 4142 / data / electronic / the case of media data, such as voice and a picture,] media at Step 4820, for example, voice, if it is a loudspeaker and a picture, it changes into the form which can be outputted to a display, and it outputs based on layout information [finishing / reading], and returns to Step 4800.
[0139] In the case of the link information to external electronic data, the information output unit 4142 is Step 4840, electronic data interpret a link information, and electronic data are acquired from external storage 4144 or the information storage server 4155. At Step 4850, if it is the output unit corresponding to media, for example, voice, if it is a loudspeaker and a picture, it changes into the form which can be outputted to a display, outputs based on layout information [finishing / reading], and returns to Step 4800.
[0140] When finishing reading all electronic data, the output of related information is completed, consequently it is Step 4830, and the information addressee 4143 can recognize the content of the related information expressed combining two or more media.
[0141] The above process enables the information addressee 4143 to refer to the content of the related information also containing the electronic data of the exterior which is not recorded on the paper containing IC chip.
[0142] If the information addressee 4143 brings the IC reader 4140 close to the position where the explanatory note 4154 was printed when the case where the content of IC chip shown by drawing 35 was held was made into the example, the IC reader 4140 reads the layout information 4431 to IC4155 currently embedded in the position of the explanatory note 4154 of the paper 4150 containing IC chip shown by drawing 25 first among the contents 4430 of IC4155 currently embedded in near, and will transmit to it at the information output unit 4142. The information output unit 4142 distinguishes the received electronic data from layout information (so far step 4800), and saves data at storage (Step 4810). Continuing, the IC reader 4140 reads the electronic data 4432 of "explanatory note of habitat" 4192 from IC4155, and transmits to the information output unit 4142. The information output unit 4142 is changed and outputted to the form which can output data to a display according to the layout information which distinguished the received electronic data from the alphabetic data (so far step 4800), and was saved at Step 4810 (Step 4820). Continuing, the IC reader 4140 reads the electronic data 4183 of the file name 4433 which is a link information from IC4155 to the photograph of a habitat, and transmits to the information output unit 4142. The information output unit 4142 distinguishes the received electronic data from a link information (so far step 4800), and acquires image data from the external storage 4144 which is the point which a file name shows (Step 4840). According to the layout information saved at Step 4810, it changes and outputs to the form which can output data to a display (Step 4850). Such a process is repeated, if it finishes outputting all the electronic data contained in the content 4430 of IC4155 (Step 4800), the output of related information 4430 will be completed, consequently it is Step 4830, and the information addressee 4143 can recognize the content of the related information 4190 expressed combining two or more media.
[0143] The above process enables the information addressee 4143 to refer to the content 4330 of the related information also containing the electronic data of the exterior which is not recorded on the paper containing IC chip.
[0144] In addition, in old explanation, although related information limited related information to one IC chip, i.e., one piece, to one space written information at one piece, you may record two or more related information on IC chip. Henceforth, one related information is called "page."
[0145] An example of the content of IC chip which recorded the two or more pages related information of space written information on drawing 37 is shown.
[0146] The related information data 4400 in IC chip consist of a related information page 1 (4402), a related information page 2 (4405), and other pages. The related information page 1 (4402) is the related information of the singular number media only containing image data 4403, and the related information

page 2 (4405) is related information which consists of electronic data of two or more media, such as the layout information 4406 and alphabetic data 4407 which specify the output layout of two or more media electronic data, image data 4408, and other data. Moreover, between pages, the break data 4401 and 4404 in which a page break is shown exist.
[0147] Although the method of choosing the page outputted to the information output unit 4142 is needed for reference of two or more pages related information, it is possible to choose the related information outputted to the information output unit 4142 by preparing the mechanism in which it transmits 1 page of related information at a time to the information output unit 4142 by pushing a button in the IC reader 4160 which equipped the button as shown by drawing 28 , for example.
[0148] The flow of the process of use of the two or more pages related information using the IC reader 4160 which equipped drawing 38 with the button is shown. The process shown by the flow of drawing 38 includes the flow of the process of related information use in which it has so far explained. Hereafter, process in which the information on the paper containing IC chip of this example is used is explained using the flow of drawing 38 .
[0149] At Step 4500, the IC reader 4160 reads the electronic data (henceforth, page data) which constitute a related information page from an IC chip by 1 page, and transmits to the information output unit 4142 through communication media 4141.
[0150] Distinction of how which was able to read page data is performed at Step 4510. When page data are not able to be read, a flow is ended, and when that is not right, it progresses to Step 4520 as it is.
[0151] At Step 4520, the information output unit 4142 outputs page data. The process of an output is the same as the process of related information use in which it has so far explained.
[0152] Consequently, the information addressee 4143 can recognize the content of the related information page for 1 page at Step 4530.
[0153] At Step 4540, it distinguishes whether the button 4161 or button 4162 of the IC reader 4160 was pushed, when pushed, it returns to Step 4500 for read-out of the following page data, and when that is not right, it progresses to the following step 4550.
[0154] At Step 4540, it distinguishes whether the IC reader 4160 separated from IC chip, when it separates, a flow is ended, and when that is not right, it returns to Step 4540.
[0155] The above process enables the information addressee 4143 to refer to the 1 page of the contents of two or more pages related information at a time.
[0156] If the content 4440 of IC chip shown by drawing 37 is made into an example and the information addressee 4143 will bring the IC reader 4160 close to IC chip, the IC reader 4160 will read the related information page 1 (4402) from IC, and will transmit to the information output unit 4142 (Step 4500). Since page data exist (Step 4510; No), the information output unit 4142 outputs image data 4403 as a related information page 1 (4402) (Step 4520). The information addressee 4143 recognizes the image data 4403 of the related information page 1 as image information (Step 4530). If the information addressee 4143 pushes the button 4161 of the IC reader 4160 (Step 4540; Yes), the IC reader 4160 will read the related information page 2 (4405) which is the following page from IC (Step 4500). Since page data exist (Step 4510; No), the information output unit 4142 outputs the alphabetic data 4407 of the related information page 2 (4402), image data 4408, etc. according to the layout information 4406 (Step 4520). The information addressee 4143 recognizes the related information page 1 (Step 4530). If the information addressee 4143 pushes the button 4161 of the IC reader 4160 (Step 4540; Yes), it will return to Step 4500 and read-out and transmission of a page will be repeated. A flow is ended, when all page data are read (Step 4510; Yes), or when the IC reader 4160 is separated from IC chip (Step 4550; Yes).
[0157] The above process enables the information addressee 4143 to refer to the 1 page of the contents of two or more pages related information at a time.
[0158] In addition, the above-mentioned process can also be used together with the process which selects related information using the button which the IC reader 4160 shown by drawing 30 equips. That is, although the transmitting start to the information output unit 4142 of related information data is meant when the IC reader 4160 was brought close to IC chip, it is notified by the information addressee 4143 that there is an IC which recorded related information and a button 4161 is first pushed because the

state of the notice section 4163 of the IC reader 4160 changes, it is also transmission of the first page data simultaneously. Moreover, after the 2nd times, it becomes transmission of the page data which continued.
[0159] Moreover, although the related information page is transmitted by explanation of the above-mentioned flow by pushing the button which the IC reader 4160 equips, you may make it transmit page data automatically at fixed intervals, such as 30 seconds and 1 minute. It also enables IC reader which has not equipped the button to apply processing of the above-mentioned flow. In this case, Step 4540 of the flow of drawing 38 turns into the step of returning to Step 4500 after waiting for 30 seconds.
[0160] Moreover, in explanation of the above-mentioned flow, the IC reader 4160 is not limited about the transmitting procedure of the electronic data which constitute especially a related information page, although the data for 1 page of a related information page are collectively transmitted to the information output unit 4142. That is, as it was also old explanation, you may transmit every one electronic data which constitutes a page.
[0161] Moreover, in explanation of the above-mentioned flow, although the IC reader 4160 read every 1 page of page data from IC chip and has transmitted to the information output unit 4142 whenever a button is pushed, the related information page data of all pages may be beforehand put in block, it may read, and it may transmit. Moreover, the IC reader 4160 reads the page data of all pages collectively, and when a button is pushed, you may make it transmit the page data for 1 page.
[0162] Moreover, although it is made to output the following related information page by the information output unit 4142 in explanation of the above-mentioned flow whenever it pushes the button which the IC reader 4160 equips, you may enable it to output arbitrary pages so that it may say that the last page will be outputted with the 3rd page and Button C if Button A is pushed and the 1st page and Button B will be pushed. In this case, Step 4540 of the flow of drawing 38 will specify the 1st page, if Button A is pushed, and it turns into the step of returning to Step 4500 and reading page data from IC chip.
[0163] In addition, although the related information page is transmitted by explanation of the above-mentioned flow by pushing the button which the IC reader 4160 equips Like Screen 4410 of the information output unit 4142 of drawing 39 , besides the output of the related information page 4411 The "page [degree]" button 4412 and the "before page" button 4413 are formed. By choosing the "page [degree]" button 4412 or the "before page" button 4413 with input units, such as a keyboard, a mouse, a touch panel, and a remote controller You may carry out as related information 4411 is changed to the following related information page or a front related information page.
[0164] Moreover, although only two buttons which perform a change to the page before and behind the "page [degree]" button 4412 and the "before page" button 4413 as a selection means of a page are used on Screen 4410 of drawing 39 , you may add the button which moves to arbitrary pages.
[0165] Moreover, on Screen 4410 of drawing 39 , although only the button on a screen is used as a selection means of a page, if the reduction image of a page is chosen with an input unit, for example and a page can be chosen using the input from the input unit of changing a page, any method may be used.
[0166] For IC chip, besides the related information of old explanation In addition, for example, the short text explaining the outline of related information etc., By reading and outputting headline information, before it adds the headline information showing a "header" with data size smaller than related information and an information output unit reads related information from IC chip Since the outline of related information can be known now, without reading related information, an information addressee comes be further made as for choice of related information to convenience.
[0167] An example of the content of IC chip which recorded the related information and the headline information on space written information on drawing 40 is shown.
[0168] The related information data 4420 in IC chip consist of a main part 4423 of electronic data of related information, and headline information 4421 on related information. The electronic data 4423 are the related information which combined two or more media containing the layout information 4424, an alphabetic data 4425, and other data in this example including all of the electronic data explained so far, page data, etc. The headline information 4421 is information showing the "header" which is the outline

of the content of the main part 4423 of electronic data, and is characterized by data size being smaller than the main part 4423 of electronic data. In this example, it is a character string explaining the main part of electronic data "explanation of the habitat of a bird."
[0169] The flow of the process of the related information use which included headline information in drawing 41 is shown. The process shown by the flow of drawing 41 includes the flow of the process of use of the related information 4420 explained so far. Hereafter, process in which the information on the paper containing IC chip of this example is used is explained using the flow of drawing 41 .
[0170] At Step 4700, the information output unit 4142 reads the headline information 4421 from IC chip using the IC reader 4140.
[0171] At Step 4710, the information output unit 4142 outputs the headline information 4421. The process of an output is the same as the process of related information use in which it has so far explained.
[0172] At Step 4715, it distinguishes whether the IC reader 4140 separated from IC chip, when it separates, a flow is ended, and when that is not right, it progresses to Step 4720.
[0173] At Step 4720, it distinguishes [whether the output start of the main part 4423 of related information data is chosen, and], when the information addressee 4143 which referred to the contents of the headline information 4421 chooses an output, it progresses to Step 4730 as it is, and it returns to Step 4715. The means of selection of the output of the main part 4423 of related information data is the button 4161 equipped with a button of the IC reader 4160.
[0174] At Step 4730, the information output unit 4142 reads the main part 4423 of electronic data of related information from IC chip using the IC reader 4140.
[0175] At Step 4740, the information output unit 4142 outputs the main part 4423 of electronic data of related information. The process of an output is the same as the process of related information use in which it has so far explained.
[0176] At Step 4750, the output of related information can be completed and the information addressee 4143 can recognize the contents of related information.
[0177] By the above process, the information addressee 4143 can choose now the related information which outputs to reference the headline information outputted before the information output unit 4142 outputs related information.
[0178] If the contents 4420 of IC chip shown by drawing 40 are made into an example and the information addressee 4143 will bring the IC reader 4160 close to IC chip, the IC reader 4160 will read the headline information 4421 from IC, and will transmit to the information output unit 4142 (Step 4700). The information output unit 4142 outputs the character string 4422 "explanation of the habitat of a bird" which is the contents of the headline information 4421 (Step 4710). If the information addressee 4143 pushes a button 4161, without separating the IC reader 4160 from IC chip (Step 4715; No) (Step 4720; Yes), the IC reader 4160 will read the main part 4423 of electronic data from IC, and will transmit to the information output unit 4142 (Step 4730). The information output unit 4142 outputs the alphabetic data 4425 which is the contents of the main part 4423 of electronic data according to the layout information 4424 (Step 4740). The information addressee 4143 recognizes the contents of the main part 4423 of electronic data (Step 4750).
[0179] By the above process, the information addressee 4143 can choose now the related information 4423 which outputs to reference the headline information 4421 outputted before the information output unit 4142 outputs related information 4423.
[0180] In addition, although the IC reader 4140 had read separately the main part 4423 of electronic data of the headline information 4421 and related information at Step 4700 and Step 4730, respectively, you may make it read both at once in explanation of the above-mentioned flow. In this case, what is necessary is just to unify Step 4730 to Step 4700 and to read the main part 4423 of electronic data of the headline information 4421 and related information at once.
[0181] In addition, the above-mentioned process can also be used together with the process which selects related information using the button which the IC reader 4160 shown by drawing 30 equips. That is, the information output unit 4142 outputs the headline information 4421 because the IC reader 4160

reads the headline information 4421 from IC chip and transmits to the information output unit 4142, while it is notified by the information addressee 4143 that there is an IC which recorded related information, because the state of the notice section 4163 of the IC reader 4160 will change if the IC reader 4160 is brought close to IC chip. The information addressee 4143 can select the related information 4423 to output now with reference to the change of state of the notice section, and the output of the headline information 4421. In this case, the step of changing the state of the notice section 4163 of the IC reader 4160 before "? on which the button was pushed" of Step 4720 of the flow of drawing 41 is added.

[0182] In addition, although it is made to specify the output start of the main part 4423 of electronic data of related information by explanation of the above-mentioned flow by pushing the button which the IC reader 4160 equips On the output screen of the output unit of the information output unit 4142, besides the output of the content 4422 of the headline information 4411 By for example, the thing for which the button prepares the button of "reading an information main part" and "reads an information main part" with input units, such as a keyboard of the information output unit 4142, a mouse, a touch panel, and a remote controller, is chosen The main part 4423 of electronic data of related information is read, and you may make it output.

[0183] In addition, although it is made to specify the output start of the main part 4423 of electronic data of related information by explanation of the above-mentioned flow by pushing the button which the IC reader 4160 equips, you may make it start the output of the main part 4423 of electronic data of related information automatically at fixed intervals, such as 30 seconds and 1 minute. It also enables the information output unit 4142 without neither IC reader which has not equipped the button, nor an input unit to apply processing of the above-mentioned flow. In this case, Step 4720 of the flow of drawing 41 turns into the step of progressing to Step 4730 after waiting for 30 seconds.

[0184] In addition, although the information output unit 4142 had equipped the output unit which is an output means for the information addressee 4143 recognizing the content of related information in old explanation, you may unite with the IC reader 4140 the output unit which outputs related information.

[0185] By equipping the display which displays the loudspeaker and picture which ask voice to the IC reader 4140, and a character string, for example, in the example of the paper 4150 containing IC chip of drawing 25 If the IC reader 4141 is brought close to the position where the photograph 4152 of a bird was printed, "the cry of a bird" can come to be heard from the loudspeaker of the IC reader 4140. In the example of the content of IC chip of drawing 37 , whenever it pushes the button 4161 of the IC reader 4160, the related information page output of the display of the IC reader 4140 comes to change. In the example of the content of IC chip of drawing 40 , if the IC reader 4160 is brought close to IC chip, the headline information 4421 will be outputted to the display of the IC reader 4140, and if a button 4161 is pushed, a related information main part will come to be outputted.

[0186] In this case, since related information can be outputted only by the IC reader 4140, although the information output unit 4142 is omissible, you may use together. For example, although voice data is outputted by the IC reader 4140, other media data output the headline information on related information outputted by the information output unit 4142 by the IC reader 4140, and the main part of related information is used like outputting by the information output unit 4142 etc.

[0187] The 5th example of [the 5th example] is an example of the method of creating a map using the paper containing IC chip, and simplifying acquisition and use of related information, such as an institution, a store, etc. of a publication, and positional information on a map.

[0188] An example of the paper containing IC chip of this example is shown in drawing 42 .

[0189] The paper 5000 containing IC chip shown by drawing 42 is a paper containing IC chip which can be created using the procedure of IC paper creation process shown by drawing 26 . The paper 5000 containing IC chip is a map, and the fundamental element (visible information) which constitutes a map called the sign showing stores and companies, such as a segment which shows a passage, the sign 5001 showing the position of "A shops", and the sign 5003 showing the position of "B company", is indicated on space. Furthermore, on the paper 5000 containing IC chip, two or more IC chips (IC5002, IC5004) are embedded. IC5002 is embedded in the position where the sign 5001 which is IC chip which recorded

the related information and positional information of "A shops", and is the space written information that it corresponds was printed. Similarly, IC5004 is IC chip which recorded the related information and positional information of "B company", and is embedded in the position where the sign 5003 was printed.
[0190] An example of the content of IC chip which recorded the related information and positional information of the map written sign 5001 on drawing 43 is shown.
[0191] The data 5010 in IC chip consist of electronic data 5011 of the related information of the map written sign 5001, and positional information 5014. The electronic data 5011 are the related information which combined two or more media containing the layout information 5012, an alphabetic data 5013, and other data in this example including all of the electronic data explained so far, page data, etc. Positional information 5014 is information which directs the position of the map written sign 5001, and is the LAT information 5015 and the LONG information 5016 in this example.
[0192] The flow of the process of the use of the related information of a map written sign and positional information to drawing 44 is shown. Although the process shown by the flow of drawing 44 is realizable using the equipment configuration of drawing 34 , or its deformation In this example, the information output unit 4142 of drawing 34 Other than the output of the related information recorded on the IC chip 3, the positional information of the IC chip 3, the information from external storage 4144 like a CD-ROM drive, etc. are used. It becomes a thing like the navigation system which is equipment which has the function which shows the optimal path of the section by specifying the position of the function which newly generates and outputs information, for example, an origin, and the destination. Moreover, the process shown by the flow of drawing 44 includes the flow of the process of use of the related information explained so far.
[0193] Hereafter, process in which the information on the paper containing IC chip of this example is used is explained using the flow of drawing 44 .
[0194] At Step 5100, the information output unit 4142 reads the related information of a map written sign from IC chip using the IC reader 4140.
[0195] At Step 5110, the information output unit 4142 outputs related information. The process of an output is the same as the process of related information use in which it has so far explained. Consequently, at Step 5120, the information addressee 4143 can recognize the content of related information.
[0196] At Step 5130, the information output unit 4142 reads the positional information of a map written sign from IC chip using the IC reader 4140.
[0197] At Step 5140, the information output unit 4142 uses the read positional information as an input for new information generation. In the case of a navigation system, it uses as a coordinate of an origin or the destination.
[0198] By the above process, the information addressee 4143 can acquire and use now the related information and positional information of a publication on a map, such as an institution and a store.
[0199] If the IC reader 4140 is brought close to the position where the sign 5001 with which the information addressee 4143 shows "A shops" of a publication in a map 5000 was printed when the content 5010 of IC chip shown by drawing 43 was made into the example, the IC reader 4140 will read the related information 5011 of "A shops" from IC5002 currently embedded in near, and will transmit to the information output unit 4142 (Step 5100). The information output unit 4142 outputs the alphabetic data 5013 which is the content of related information 5011 according to the layout information 5012 (Step 5110). The information addressee 4143 recognizes the content of related information 5011 (Step 5120). Furthermore, the IC reader 4140 reads the positional information 5014 of "A shops", and transmits to the information output unit 4142 (Step 5130). The information output unit 4142 uses the content (LONG "east longitude 139-degree 46 minutes", and information 5015, LAT information 5016 "north latitude 35-degree 41 minutes") of the read positional information 5014 as positional information of "A shops." In the case of a navigation system, it uses as a coordinate of an origin or the destination (Step 5140). .
[0200] By the above process, the information addressee 4143 can acquire and use now the related

information 5011 and positional information 5014 of "A shop" 5001 given in a map 5000.
[0201] In addition, although the IC reader 4140 had read related information 5011 and positional information 5014 separately at Step 5100 and Step 5130, respectively, you may make it read both at once in explanation of the above-mentioned flow. In this case, what is necessary is just to unify Step 5130 to Step 5100 and to read related information 5011 and positional information 5014 at once. Moreover, when reading separately, reverse is sufficient as the read-out sequence of related information and positional information. In this case, it becomes the flow located in a line with Step 5130, Step 5140, Step 5100, Step 5110, and Step 5120.
[0202] In addition, although related information 5011 and positional information 5014 were recorded on IC chip in explanation of the above-mentioned flow, only positional information is. In this case, in the information output unit 4142, the output unit for the output of related information 5011 becomes unnecessary, and performs only informational creation using positional information 5014.
[0203] In addition, although explanation of the above-mentioned flow shows the example which embedded IC which recorded related information and positional information on the position of a sign given in a map, even if the paper containing IC chip is not a map, the process of the above-mentioned flow is applicable. That is, also by the case of a map, the whole space may not be a map and the positional information of an institution may be contained as related information of the photograph of not a map but an institution.
[0204] In addition, although LAT LONG was used as positional information in explanation of the above-mentioned flow, what thing may be used as long as it is form that the information output unit using positional information can pinpoint a position.
[0205] The 6th example of [the 6th example] is an example of the method of creating a TV program table using the paper containing IC chip, and simplifying reference of the related information of the program of a publication, and a television channel change and video videotape-recording reservation to a race card.
[0206] An example of the paper containing IC chip of this example is shown in drawing 45 .
[0207] The paper 6000 containing IC chip shown by drawing 45 is a paper containing IC chip which can be created using the procedure of IC paper creation process shown by drawing 26 . The paper 6000 containing IC chip is the TV program table having shown the televising schedule of a TV program, and visible information, such as a title of televising programs, such as a program 6001 "morning news" and a program 6003 "a specially selected dish", is indicated for every television channel on space. Furthermore, on the paper 6000 containing IC chip, two or more IC chips (IC6002, IC6004) are embedded. IC6002 is embedded in the position where the program 6001 which are the related information of "morning news" and the space written information that are IC chip which recorded program televising information, such as a program televising start time and a finish time, and it corresponds was printed. Similarly, IC5004 is IC chip which recorded the related information and the program televising information on "a specially selected dish", and is embedded in the position where the program 6003 was printed.
[0208] An example of the content of IC chip which recorded the related information and positional information of a program 6001 of a publication on drawing 46 at the race card 6000 is shown.
[0209] The data 6010 in IC chip are constituted from the electronic data 6011 and the program televising information 6014 of related information on a program 6001 of a publication by the race card 6000. The electronic data 6011 are the related information which combined two or more media containing the layout information 6012, an alphabetic data 6013, and other data in this example including all of the electronic data explained so far, page data, etc. The program televising information 60144 is information which directs the televising schedule of a program 6001, and is the channel 6015 of a program, a start time 6016, and a finish time 6016 in this example.
[0210] The flow of the process of timer reservation of the television channel change or television, and video videotape recording by reference of the related information of a program given in a race card and use of program televising information is shown in drawing 47 .
[0211] Although the process shown by the flow of drawing 47 is realizable using the equipment

configuration of drawing 34 , or its deformation, in this example, the information output unit 4142 of drawing 451 becomes a thing like the television receiver which is equipment which equipped the tuner for receiving the TV program other than the output of the related information recorded on the IC chip 3, or a videocassette recorder. Moreover, the process shown by the flow of drawing 44 includes the flow of the process of use of the related information explained so far.

[0212] Hereafter, process in which the information on the paper containing IC chip of this example is used is explained using the flow of drawing 47 .

[0213] At Step 6100, the information output unit 4142 reads the related information of a map written sign from IC chip using the IC reader 4140.

[0214] At Step 6110, the information output unit 4142 outputs related information. The process of an output is the same as the process of related information use in which it has so far explained. Consequently, at Step 6120, the information addressee 4143 can recognize the content of related information.

[0215] At Step 6130, the information output unit 4142 reads the televising information on a program given in a race card from IC chip using the IC reader 4140.

[0216] At Step 6140, the information output unit 4142 is changed into the state where a program is receivable, with reference to the read televising information. For example, the channel of a tuner is changed to the channel of a program, if it is a program before televising, in the case of the program under televising, timer reservation which changes a channel to the time automatically will be set up, or it will set up video videotape-recording reservation which starts videotape recording.

[0217] By the above process, the information addressee 4143 can perform timer reservation of the television channel change or television, and video videotape recording by reference of the related information of a program given in a race card, and use of program televising information to simplification.

[0218] If the IC reader 4140 is brought close to the position where the program 6001 with the information addressee 4143 given in a race card 6000 "morning news" was printed when the content 6010 of IC chip shown by drawing 46 was made into the example, the IC reader 4140 will read the related information 6011 of "morning news" from IC6002 currently embedded in near, and will transmit to the information output unit 4142 (Step 6100). The information output unit 4142 outputs the alphabetic data 6013 which is the content of related information 6011 according to the layout information 6012 (Step 6110). The information addressee 4143 recognizes the content of related information 6011 (Step 6120). Furthermore, the IC reader 4140 reads the program televising information 6014 on "morning news", and transmits to the information output unit 4142 (Step 6130). the content (a channel 6015 "1" --) of the program televising information 6014 which the information output unit 4142 read With reference to "6:0" and a start time 6016, and a finish time 6017 "6:55", supposing the present time is televising time (from 6:00 to for [6:00] 55 minutes), will change the channel of a television tuner to "1", and if that is not right Timer reservation is set up so that it may change to a channel "1" at 6:00. When the information output unit 4142 is a videocassette recorder, videotape-recording reservation is set up.

[0219] By the above process, the information addressee 4143 can perform easily timer reservation of the television channel change or television, and video videotape recording by reference of the related information 6011 of the program 6001 of a publication, and use of the program televising information 6014 to a race card 6000.

[0220] In addition, although the IC reader 4140 had read separately related information 6011 and the program televising information 6014 at Step 6100 and Step 6130, respectively, you may make it read both at once in explanation of the above-mentioned flow. In this case, what is necessary is just to unify Step 6130 to Step 6100 and to read related information 6011 and positional information 6014 at once. Moreover, when reading separately, reverse is sufficient as the read-out sequence of related information and positional information. In this case, it becomes the flow located in a line with Step 6130, Step 6140, Step 6100, Step 6110, and Step 6120.

[0221] In addition, although related information 6011 and the program televising information 6014 were recorded on IC chip in explanation of the above-mentioned flow, it is also good to accept it program

televising information 6014. In this case, in the information output unit 4142, the output unit for the output of related information 6011 becomes unnecessary, and performs only control of the tuner using the program televising information 6014, and a videocassette recorder.
[0222] In addition, although the example which embedded IC which recorded related information 6011 and the program televising information 6014 is shown in the race card 6000 by explanation of the above-mentioned flow, even if the paper containing IC chip is not a race card, the process of the above-mentioned flow is applicable. That is, what indicated the program itself like the program introduction page of a television informational magazine may be used.
[0223] In addition, although the channel 6015, the start time 6016, and the finish time 6017 were used as program televising information 6014 in explanation of the above-mentioned flow, what thing may be used as long as the channel, the televising start time, the finish time, or televising time of a program is form that a position can be pinpointed. It is for example, like the G code which encoded the channel well used for videotape-recording reservation of a videocassette recorder, the televising start time, and the finish time.
[0224]
[Effect of the Invention] As mentioned above, the following effects can be acquired by performing communication of information using the paper which was united with an electronic storage like the paper containing IC chip.
[0225] Informational forgery, a postscript, and deletion become comparatively difficult by changing a gestalt and recording the information on the same content as the information printed to a paper portion on IC portion the 1st.
[0226] The information on the same content as the information printed to a paper portion to the 2nd is recorded on IC portion, and the information transmitted to a visual-sense healthy person can be easily transmitted also to a visually impaired person by enabling it to output with gestalten, such as voice and Braille points.
[0227] If the content of record to IC portion is read and reproduced [3rd] by recording the information on the same content as the information printed to a paper portion on IC portion to reproduce information, since it will become unnecessary to copy using an optical copying machine, the problem of degradation is lost.
[0228] Since what is necessary is 4th to read the content of record from IC portion, and just to process, when computer-processing information, recognition by special equipments, such as OCR, is unnecessary.
[0229] Even when the space which indicates [5th] information is limited, comparatively many information can be recorded on IC portion, and information other than a document still like voice and a picture can also be recorded.
[0230] If information required for the 6th is recorded only on IC portion, without printing into a paper portion, information can prevent touching many and unspecified men's eyes.
[0231] The work to find out becomes easy by searching with computer-processing the information currently recorded on it by IC portion to find out a desired thing to the 7th from a lot of information.

[Translation done.]

* NOTICES *

1. This document has been translated by computer.So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3.In the drawings, any words are not translated.

PRIOR ART

[Description of the Prior Art] Drawing a character and drawing on paper, and delivering and receiving them as a method of transmitting information, from the former, is performed widely. Although the communication of information by media other than paper, such as being based on voice, is also possible, paper is the communication-of-information medium which has the function of not only informational transfer but distribution, or preservation, and was excellent also in list nature.

[Translation done.]

* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] The block diagram showing the equipment configuration for carrying out this invention.
[Drawing 2] The flow view showing the fundamental flow of the method of carrying out this invention.
[Drawing 3] The block diagram showing the example of an equipment configuration for creating a handbill in the 1st example.
[Drawing 4] The flow view having shown the process which creates a handbill in the 1st example.
[Drawing 5] The block diagram showing the example of an equipment configuration for recognizing the content of a handbill in the 1st example.
[Drawing 6] The flow view having shown process in which the content of a handbill was recognized, in the 1st example.
[Drawing 7] The flow view having shown the process which creates a handbill in the modification 1 of the 1st example.
[Drawing 8] The flow view having shown process in which the content of a handbill was recognized, in the modification 1 of the 1st example.
[Drawing 9] The flow view having shown the process which creates a handbill in the modification 2 of the 1st example.
[Drawing 10] The flow view having shown process in which the contents of a handbill were recognized, in the modification 2 of the 1st example.
[Drawing 11] The flow view having shown the process which creates a product catalog in the 2nd example.
[Drawing 12] The image view having shown an example of the product catalog created in the 2nd example.
[Drawing 13] Drawing showing an example of the bill of material about the product parameter information indicated in a product catalog.
[Drawing 14] Drawing showing an example which carried out the data description of the specification about product parameter information in XML form.
[Drawing 15] The flow view having shown process in which a product catalog was collected and used in the 2nd example.
[Drawing 16] The block diagram showing the example of an equipment configuration for collecting and using a product catalog in the 2nd example.
[Drawing 17] Drawing showing the example of the comparison result which analyzed and displayed the data of the specification about product parameter information in the 2nd example.
[Drawing 18] The block diagram showing the example of an equipment configuration for drawing up distributivity documents in the 3rd example.
[Drawing 19] The flow view having shown the process which draws up distributivity documents in the 3rd example.
[Drawing 20] The flow view having shown the detail of character code train input process in the 3rd example.

[Drawing 21] Drawing showing the example of the mapping table used in the 3rd example in case reference data are read.
[Drawing 22] Drawing which expresses an example of a character code input screen in the 3rd example.
[Drawing 23] Drawing showing an example of the distributivity documents drawn up in the 3rd example.
[Drawing 24] The block diagram having shown the example of an equipment configuration used in the 4th example when using the related information of space written information.
[Drawing 25] The image view having shown an example of the paper containing IC chip which recorded the related information of space written information in the 4th example.
[Drawing 26] The flow view having shown the process which creates the paper containing IC chip which recorded the related information of space written information in the 4th example.
[Drawing 27] The flow view having shown process in which the contents of the paper containing IC chip which recorded the related information of space written information were recognized in the 4th example.
[Drawing 28] The image view having shown an example of IC reader equipped with a notice means to notify that the data acquisition from a button and IC chip which is an input means is possible, in the 4th example.
[Drawing 29] The block diagram having shown the example of an equipment configuration of IC reader equipped with a notice means to notify that the data acquisition from a button and IC chip which is an input means is possible, in the 4th example.
[Drawing 30] The flow view showing the procedure of IC reader equipped with a notice means to notify that the data acquisition from a button and IC chip which is an input means is possible, in the 4th example.
[Drawing 31] The image view having shown an example of the output screen of the related information which consisted of two or more media data in the 4th example.
[Drawing 32] Drawing having shown an example of the contents of IC chip which recorded the related information of space written information which consisted of two or more electronic data in the 4th example.
[Drawing 33] The flow view which consisted of two or more electronic data in the 4th example and in which having shown process in which the contents of the paper containing IC chip which recorded the related information of space written information were recognized.
[Drawing 34] The block diagram having shown the example of an equipment configuration used when using the related information of the space written information which contains the external information which is not recorded on IC chip in the 4th example.
[Drawing 35] Drawing having shown an example of the contents of IC chip which recorded the related information of space written information which contains the external information which is not recorded on IC chip in the 4th example.
[Drawing 36] The flow view having shown process in which the contents of the paper containing IC chip which recorded the related information of space written information which contain the external information which is not recorded on IC chip in the 4th example were recognized.
[Drawing 37] Drawing having shown an example of the contents of IC chip which recorded the related information of space written information which consisted of two or more related information in the 4th example.
[Drawing 38] The flow view which consisted of two or more related information in the 4th example and in which having shown process in which the contents of the paper containing IC chip which recorded the related information of space written information were recognized.
[Drawing 39] The image view having shown an example of the output screen of the information output unit which includes a means to choose two or more related information pages, in the 4th example.
[Drawing 40] Drawing having shown an example of the related information of space written information, and the contents of IC chip which recorded the headline information in the 4th example.
[Drawing 41] The flow view which included headline information in the 4th example and in which

having shown process in which the contents of the paper containing IC chip which recorded the related information of space written information were recognized.
[Drawing 42] The image view showing an example of the map which recorded the related information and positional information given in space about a sign in the 5th example.
[Drawing 43] Drawing having shown an example of the contents of IC chip which recorded the related information and positional information given in a map about a sign in the 5th example.
[Drawing 44] The flow view having shown recognition of the map which recorded the related information and positional information given in space about a sign in the 5th example, and the process of use of the positional information in an information output unit.
[Drawing 45] The image view showing an example of the race card which recorded the related information and the program televising information given in space about a program in the 6th example.
[Drawing 46] Drawing having shown an example of the content of IC chip which recorded the related information and the program televising information given in a race card about a program in the 6th example.
[Drawing 47] The flow view having shown recognition of the race card which recorded the related information and the program televising information given in space about a program in the 6th example, and the process of use of the program televising information in an information output unit.
[Description of Notations]
1 [-- IC portion of the paper containing IC chip, 10 / -- An input unit, 20 / -- A central processing unit, 30 / -- Storage, 40 / -- An output unit, 50 / -- IC reader writer.] -- The paper containing IC chip, 2 -- The paper portion of the paper containing IC chip, 3

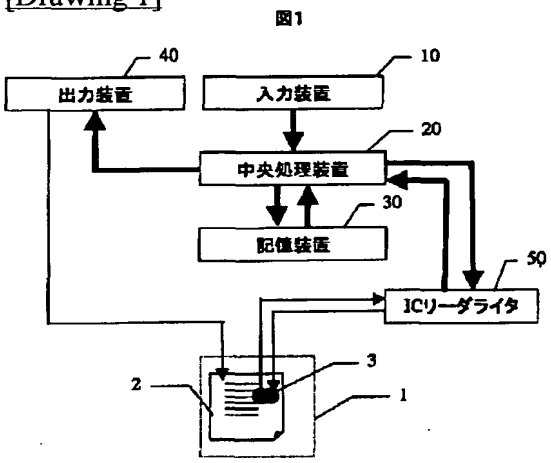
[Translation done.]

* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

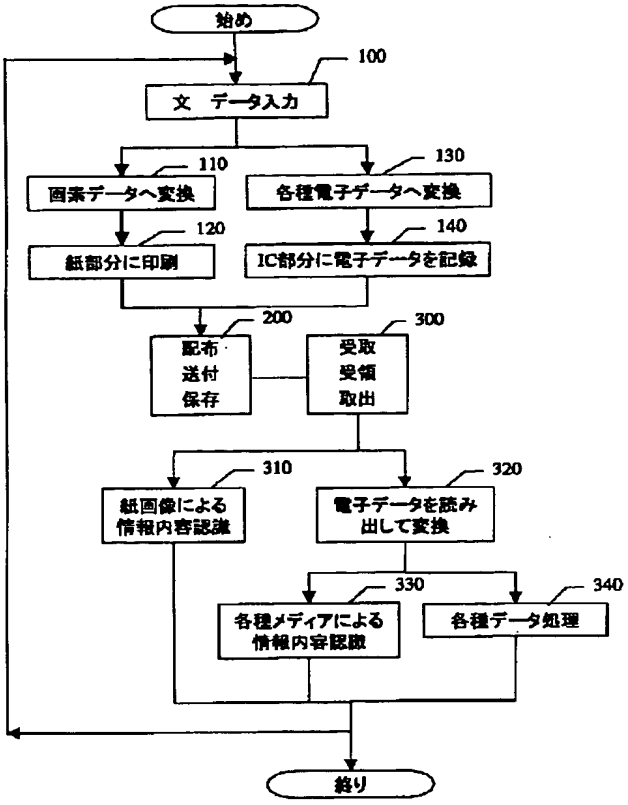
DRAWINGS

[Drawing 1]



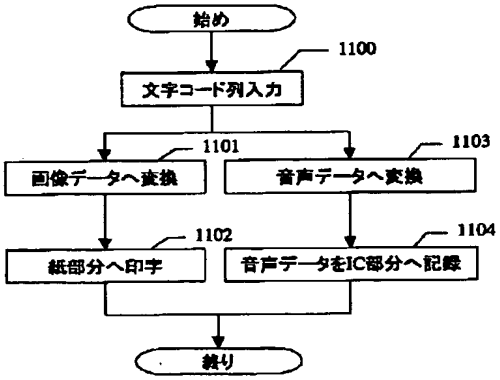
[Drawing 2]

図2



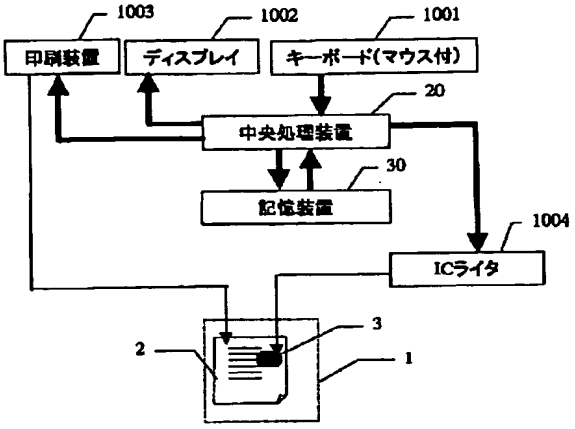
[Drawing 4]

図4



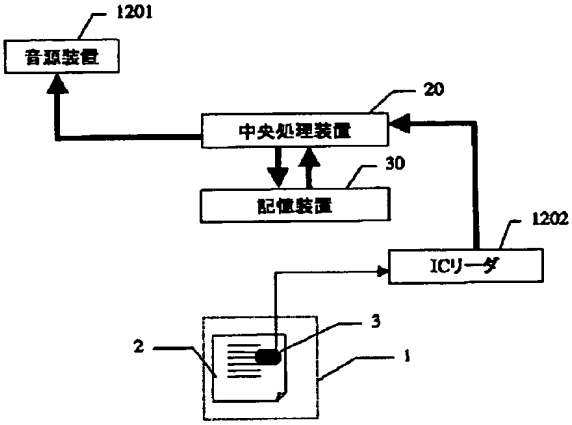
[Drawing 3]

図3



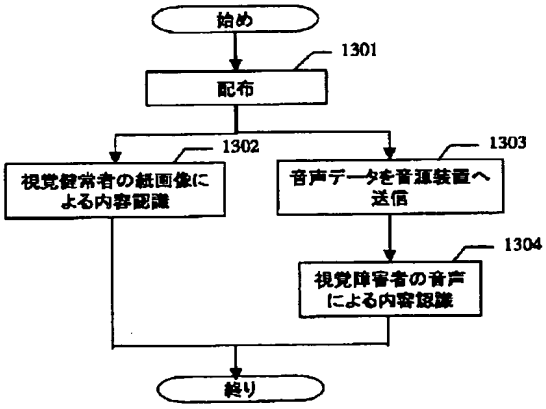
[Drawing 5]

図5



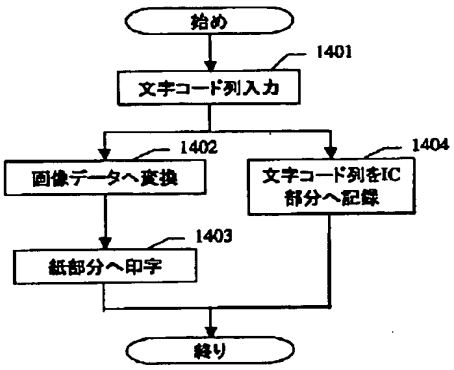
[Drawing 6]

図6



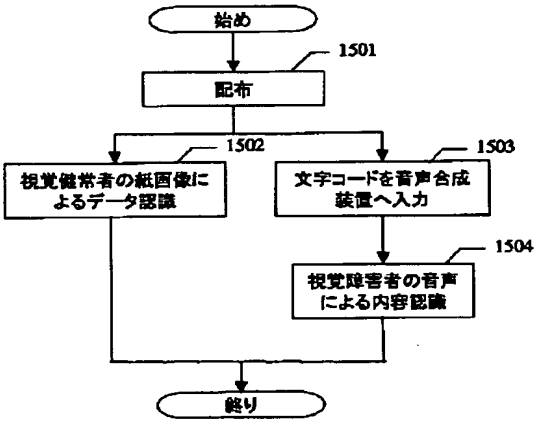
[Drawing 7]

図7



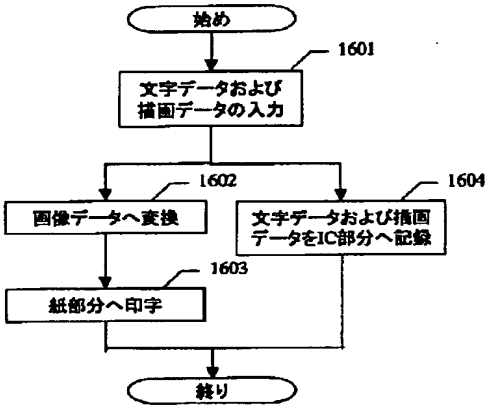
[Drawing 8]

図8



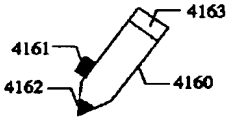
[Drawing 9]

図9



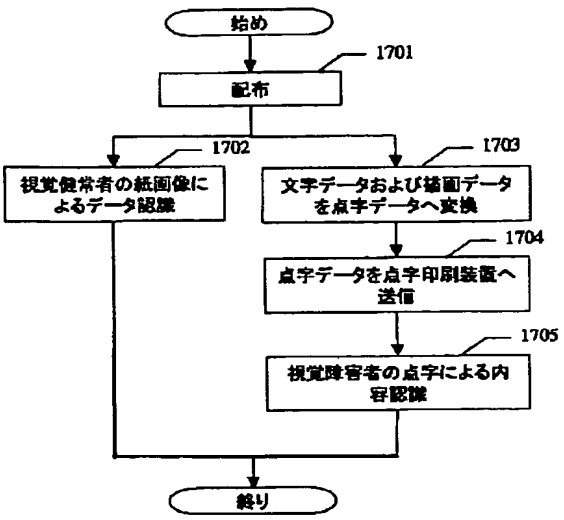
[Drawing 28]

図28



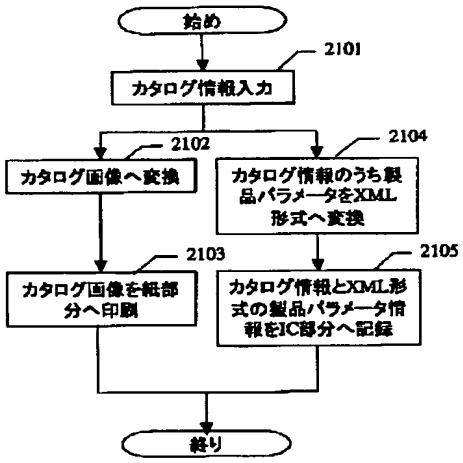
[Drawing 10]

図10



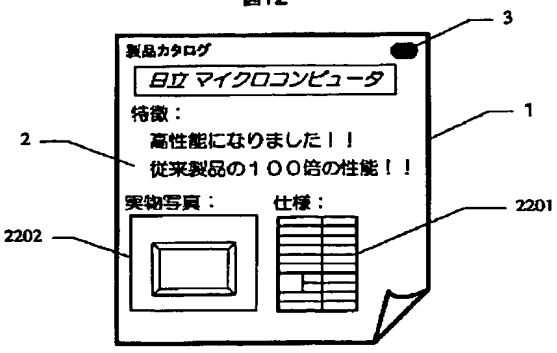
[Drawing 11]

図11



[Drawing 12]

図12



[Drawing 13]

図13

2201

項目		値
メーカ名		日立製作所
製品名		マイクロコンピュータ
型名		HD33221100BP987
電源電圧(V)		3.3
動作周波数(MHz)		200
処理速度	MIPS	360
	FLOPS(G)	1.4
消費電力(W)		1.5
価格(円)		10000

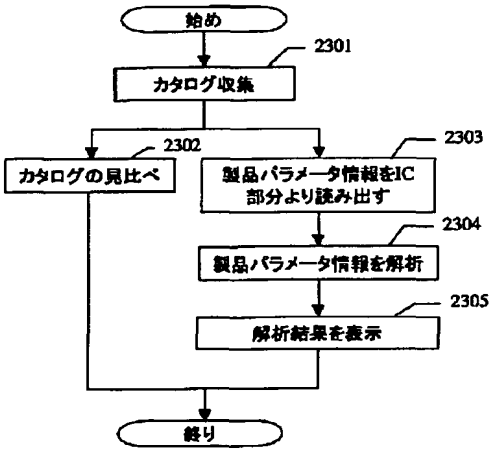
[Drawing 14]

図14

```
<?xml version="1.0" encoding="shift_jis"?>
<製品仕様>
<メーカ名>日立製作所</メーカ名>
<製品名>マイクロコンピュータ</製品名>
<型名>HD33221100BP987</型名>
<電源電圧 単位="V">3.3</電源電圧>
<動作周波数 単位="MHz">200</動作周波数>
<処理速度>
  <MIPS>360</MIPS>
  <FLOPS 単位="G">1.4</FLOPS>
</処理速度>
<消費電力 単位="W">1.5</消費電力>
<価格 単位="円">10000</価格>
</製品仕様>
```

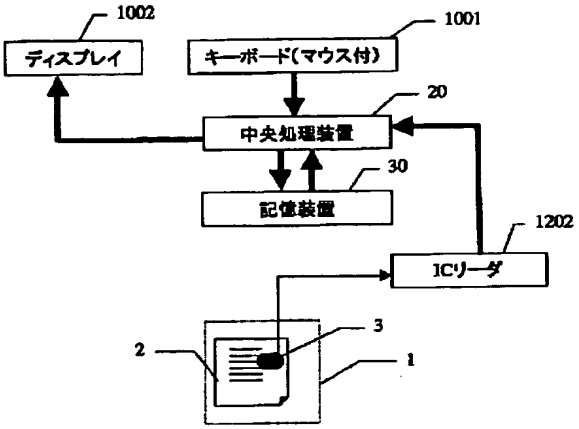
[Drawing 15]

図15



[Drawing 16]

図16



[Drawing 17]

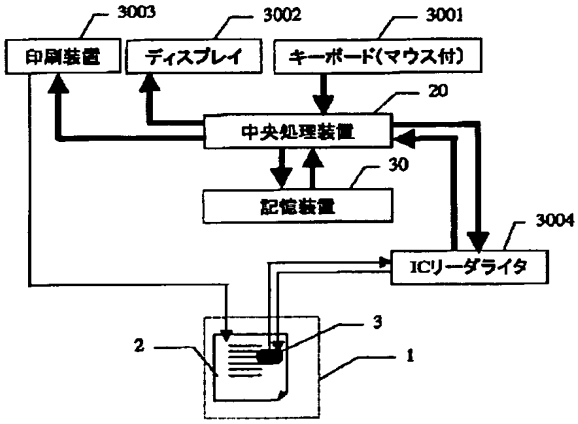
図17

2401 型名	2402 消費電力(W)	2403 価格(円)
HD33221103BP987	1.5	10000
HD33221100BP936	1.3	9000
HD33221125BP933	1.2	8000
HD33221100BP946	1.6	6500
⋮	⋮	⋮

2400

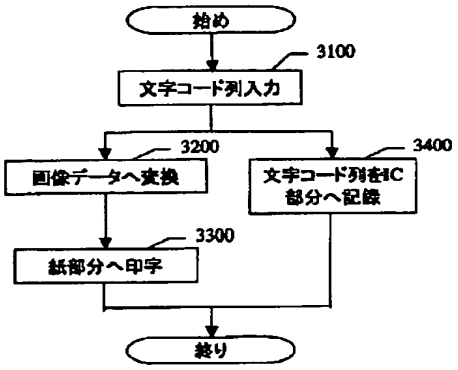
[Drawing 18]

図18



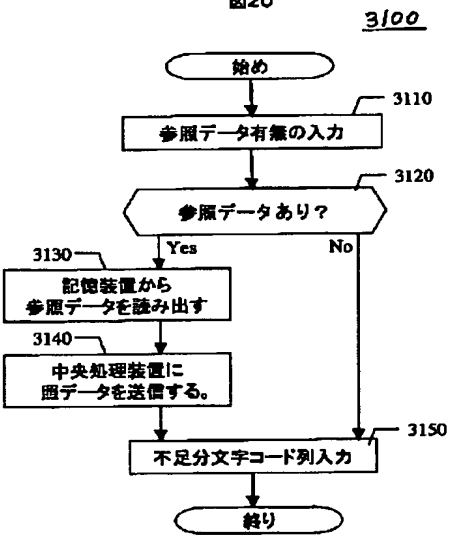
[Drawing 19]

図19



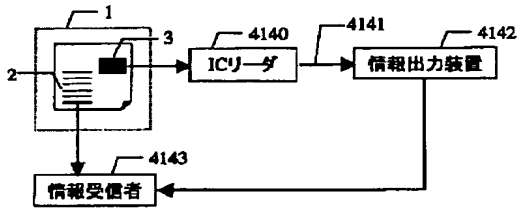
[Drawing 20]

図20



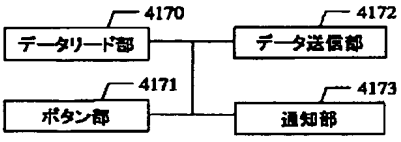
[Drawing 24]

図24



[Drawing 29]

図29



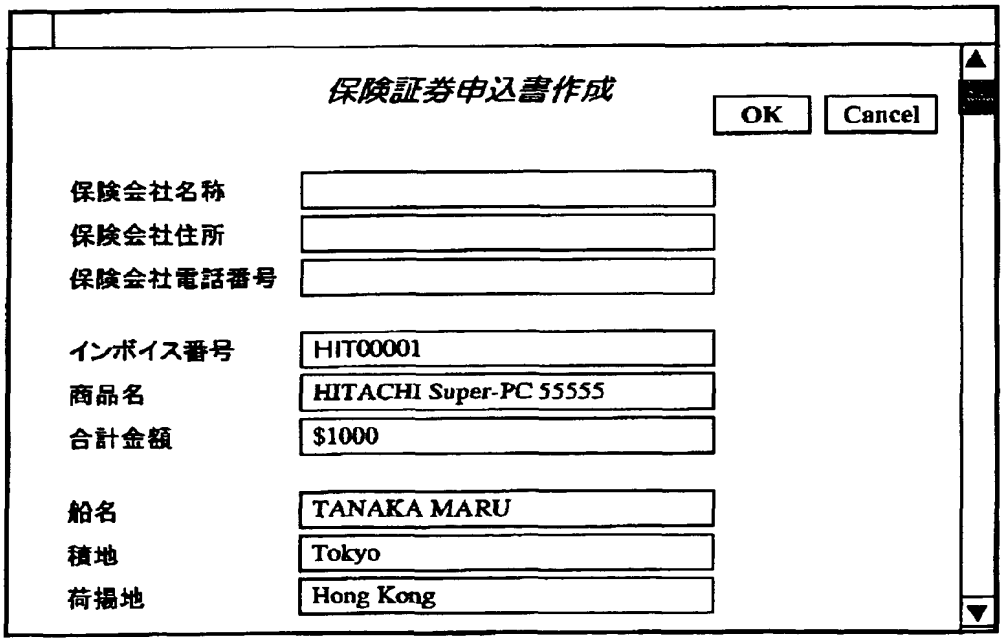
[Drawing 21]

図21

3131 作成文　名	3132 項目名	3133 参照文　名	3134 参照項目名
保険証券申込	保険会社名称	—	—
	保険会社住所	—	—
	保険会社電話番号	—	—
	被保険者名称	—	—
	被保険者住所	—	—
	インボイス番号	インボイス	インボイス番号
	商品名	インボイス	商品名
	合計金額	インボイス	合計金額
	船名	インボイス	船名
	…	…	…
船腹予約申込	申込者名称	—	—
	商品名	インボイス	商品名
	船名	—	—
	積地	—	—
	荷揚地	—	—
	…		…

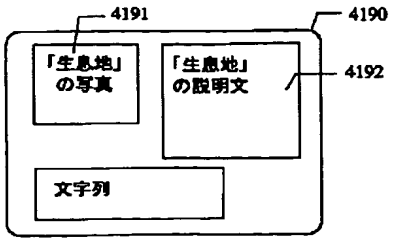
[Drawing 22]

図22



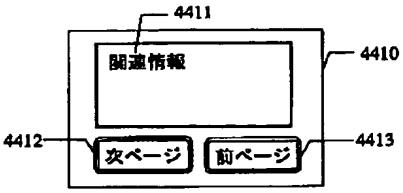
[Drawing 31]

図３１



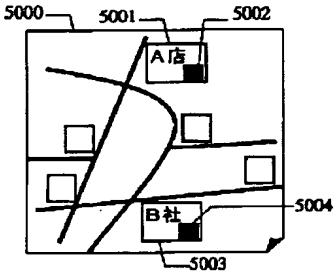
[Drawing 39]

図３９



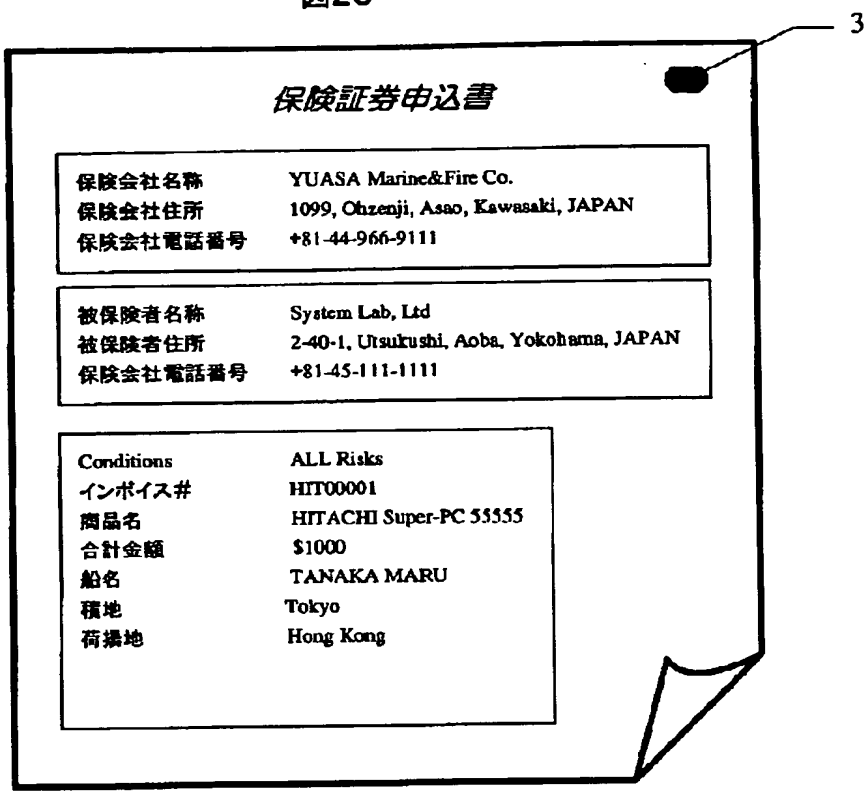
[Drawing 42]

図４２



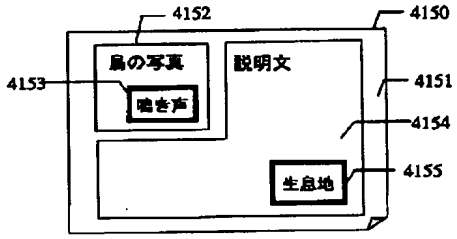
[Drawing 23]

図23



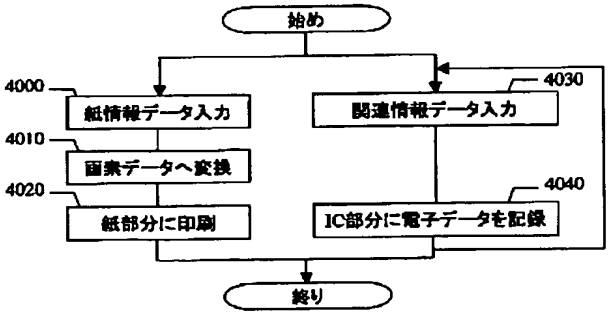
[Drawing 25]

図25



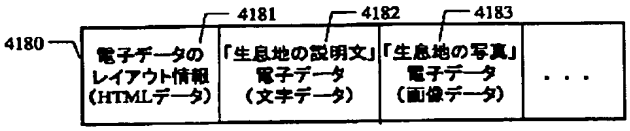
[Drawing 26]

図26



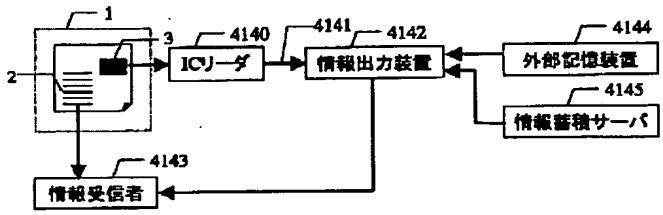
[Drawing 32]

図３２



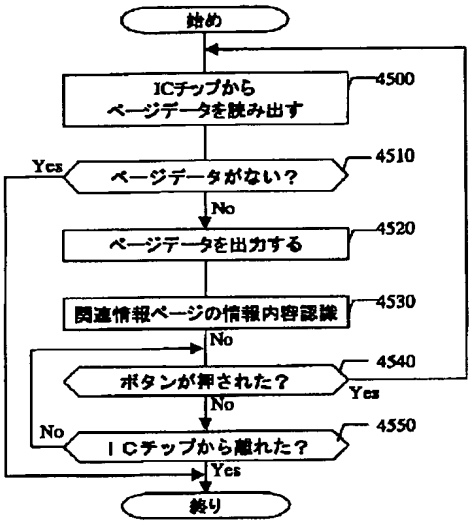
[Drawing 34]

図３４



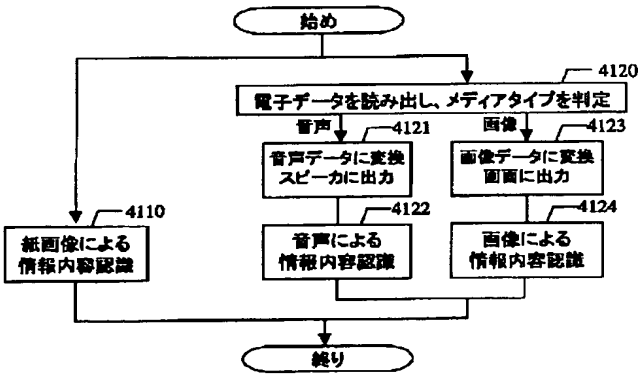
[Drawing 38]

図３８



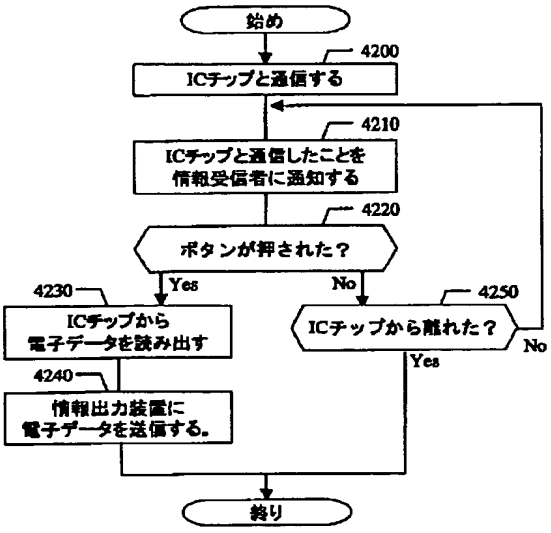
[Drawing 27]

図２７



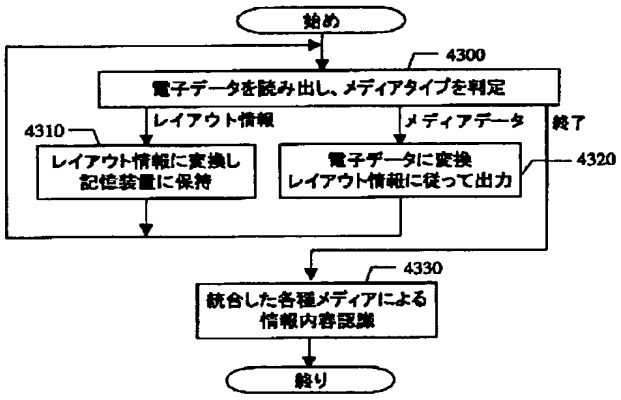
[Drawing 30]

図３０



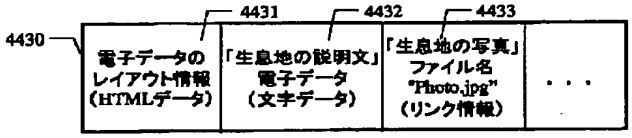
[Drawing 33]

図３３



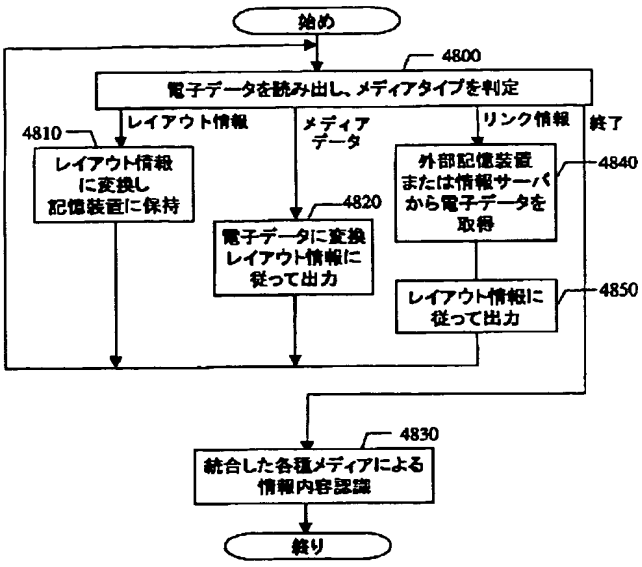
[Drawing 35]

図３５



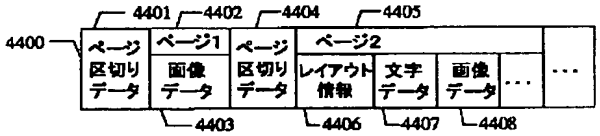
[Drawing 36]

図３６



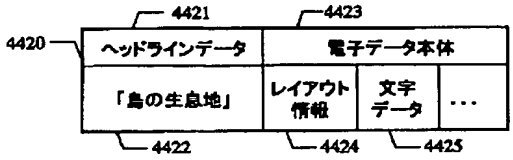
[Drawing 37]

図３７



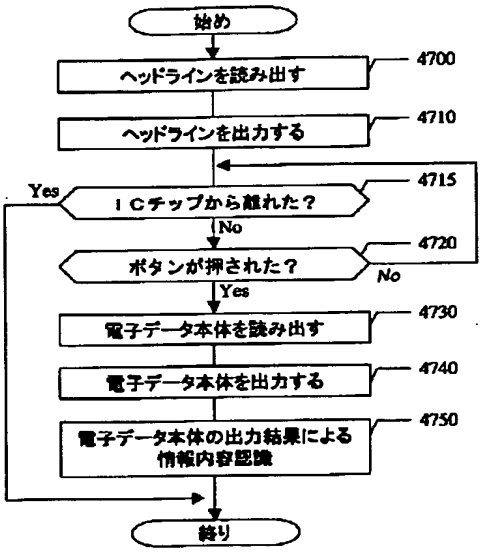
[Drawing 40]

図４０



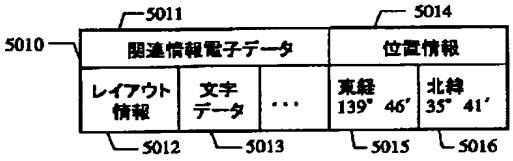
[Drawing 41]

図４１



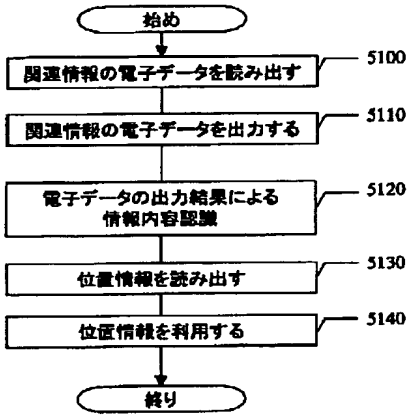
[Drawing 43]

図４３



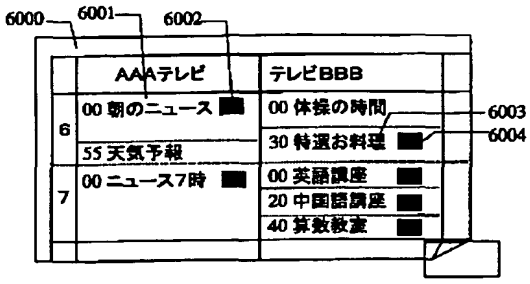
[Drawing 44]

図４４



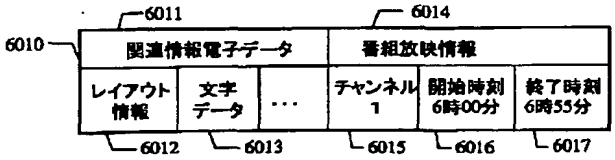
[Drawing 45]

図４５



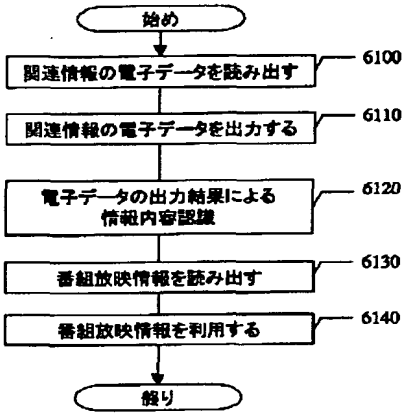
[Drawing 46]

図４６



[Drawing 47]

図４７



[Translation done.]